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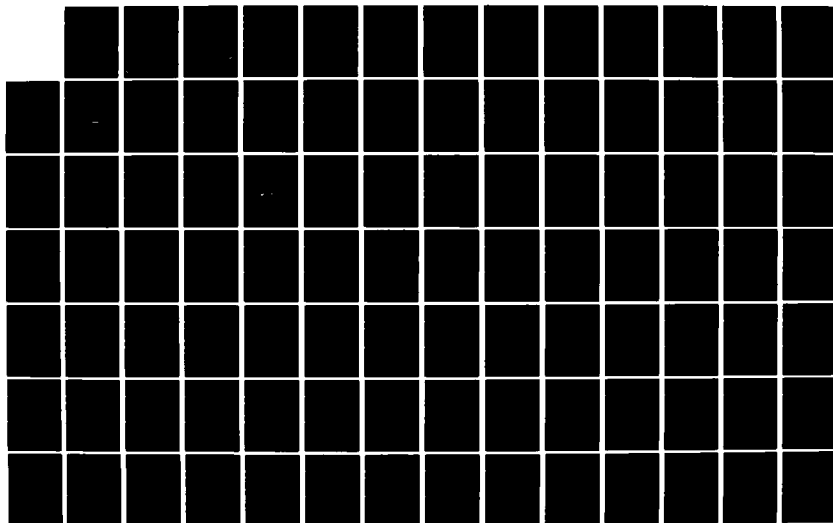
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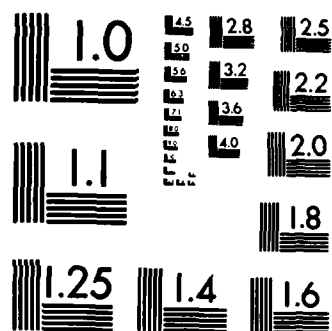
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DEPARTMENT OF DEFENSE BUDGET PLANNING: A LONG-RANGE VIEW

Research Report

by

COL James J. Hogan, USAF

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DEPARTMENT OF DEFENSE BUDGET PLANNING:

A LONG-RANGE VIEW

Research Report

by

COL James J. Hogan, USAF
Associate Research Fellow

1982

National Defense University
Research Directorate
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Washington, DC 20319

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DEPARTMENT OF DEFENSE BUDGET PLANNING: A LONG-RANGE VIEW

INTRODUCTION

In 1977 President Carter pledged to the NATO ministers an increase in US defense spending of 3 percent per year. From that moment this pledge has caused much controversy, particularly over how to calculate this 3 percent, because the manner of calculation causes considerable differences in budgetary impact. Without wading into the center of that controversy, it is important to note that an administration voted into office on a platform promising a substantial decrease in defense spending was pledging to extend the existing expansion of the Department of Defense (DOD) budget for the longest period since 1945.

The size of the defense budget has contracted and expanded in the last 20 years in a semirhythmic fashion. The general rise in budget authorization during the 1960s, broken by a 2-year contraction starting in 1964, peaked near the end of the decade at \$194.1 billion. This rise was followed in 1969 by the steep, 7-year contraction period that reduced the budget by over 31 percent. Since 1976 the budget has slowly moved back to the level of the early 1960s but still far below the peak authorizations of the Vietnam years. The cumulative effects of events in Iran, Afghanistan, Latin America, and the SALT discussions have acted as catalysts in creating a general consensus for increased military spending.

The election of Ronald^dA Reagan to the presidency, along with a markedly more conservative legislative body, further strengthens the expectations within DOD that the next several years will witness not only sustained but also large increases in the DOD budget. Planning staffs within DOD are preparing revised force structure plans based on these expectations. The issue of concern is how vulnerable are these plans to disruption in the out-years as a result of unexpected changes in the national economy as well as shifts in national priorities.

One approach to examining this issue is to explore first the relationship of the total Federal budget to the national economy in an effort to find the reasonable limits of the overall Federal program. This examination includes a brief analysis of the Federal budget structure along with budget projections. DOD budget planning is then examined with particular attention to the force structure in the aftermath of Vietnam. This is followed by a discussion of the actual planning process and how that process has been translated into forces in previous budgets. This leads to consideration of the costs associated with deviation from plans. These additional budget drains may be direct economic costs, indirect second-order costs, or a combination of both. Finally, this study offers some considerations that may be useful in improving the DOD budget planning process.

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Although the reader may perceive an atmosphere of skepticism and certainly caution regarding the probability of large and sustained increases in the budget, he will find that no attempt is made to forecast the size of future DOD budgets. On the contrary, this paper attempts to examine what conditions within the domestic economy and the Federal budget structure may interfere with a DOD plan based on large and sustained increases in its budget and how to avoid some of the costs that are likely to be incurred in the event of such interference.

CHAPTER I

THE NATIONAL ECONOMY: SOURCE OF THE FEDERAL BUDGET

Budgets are not inherently
exciting documents...

Robert A. Lineberry

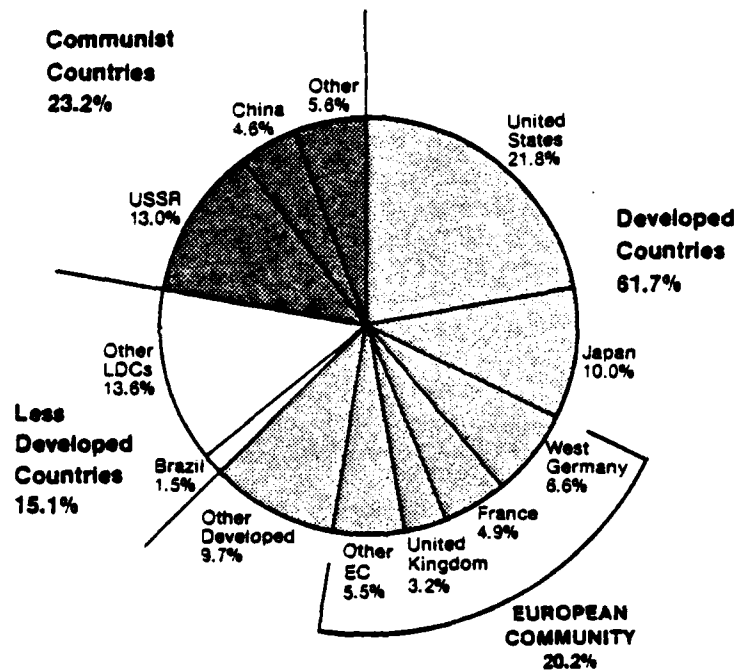
The long anticipated recession of the latest business cycle finally arrived in mid-1980. It followed a previous cycle marked by a dramatic low in the 1974-75 period and an equally impressive recovery in 1976. The ensuing years since this recovery have recorded an economy with neither the vitality of previous decades nor the terminal illness described by the more pessimistic forecasters. Instead we see an economy constrained by "stagflation," having little prospect of breaking out of its pattern of slow growth during expansionary phases, and the continual threat of debilitating recessions lurking around each set of monthly statistics. Such economic performance is frustrating for a number of Federal agencies attempting to revitalize the economy and discouraging to the general population in their efforts to realize the expectations engendered in a time of economic health.

Strength of the US Economy

Despite these frustrations and discouragements, the US economy outperforms all other economies in the world and retains a set of national power factors that insure its economic vitality far into the future. In terms of gross national product (GNP) the United States has maintained its number one position in the ranking of national economies. The dramatic growth of west European, Japanese, and Soviet GNPs should not distort our view of the absolute size and strength of the United States economy. As shown in Figure 1, the ^{United States} US currently produces nearly one quarter of the total world GNP. The next largest economy, that of the Soviet Union, has a GNP equal to only about 59 percent of the GNP of the United States, even the combined GNP of the entire European community is unable to surpass the US effort.¹

Our growth rate has declined in the last decade to approximately 3 percent versus 5 percent during the 1960s. If the United States continued to encounter economic drags such as a new rise in OPEC oil prices, persistent high inflation, and mediocre industrial investment, the growth rate could drop below 2 percent throughout the 1980s. Even if the Soviet Union GNP grew at 3 percent and the developing world at 6 percent, the US economy in 1990, with over 20 percent of the total world GNP, would still lead all other nations. Thus in this first assessment of US economic strength, a conservative approach using the most common yardstick provides one with a sense of continued US dominance of the world economic structure, albeit tempered by the realization that this

Figure 1
World Gross National Product, 1978
 Total: 9,680 Billion 1978 US \$



position will continue to diminish over time. As a measure of national strength GNP provides a useful but crude measurement. Other factors such as labor and production capacity play an important part in determining the vitality and long-term endurance of an economy.

Labor is a basic resource in the production process and, in the case of the United States, provides insight into the character of the economy. The first feature to be noted is its size--over 100 million workers. This work force alone surpasses the total populations of several industrialized nations possessing strong economies. Because the labor force comprises only about 47 percent of our population, the expansionary potential is enormous.

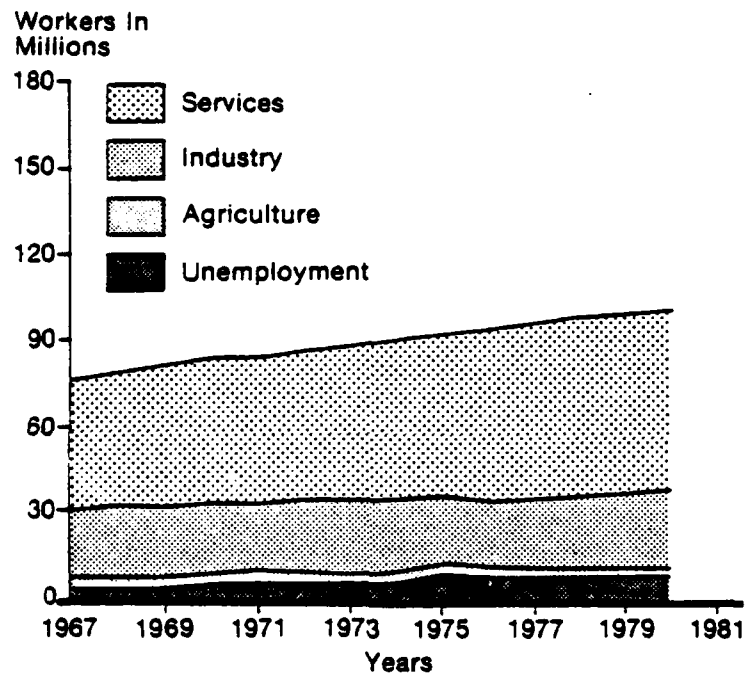
If the United States found it necessary to expand the work force, it could obtain significant labor increases quickly by hiring the approximately 6 percent of the current force that is unemployed. Further expansion could be achieved through greater use of women in the force. Thirty-seven percent of the current US labor force is women. However this level of participation is not unusual in most industrialized states and is far less than the 59 percent found in the Soviet Union. Finally, there is the option of extending the working time of those employed. This could be in the form of longer work weeks from the current 38.5 hours to the standards of 46.5 hours in Western Europe or by delaying retirement ages beyond the current 62-65 year range. Such changes in the work force

could not be accomplished without certain societal changes which may be difficult to achieve. However, the purpose here is to point out the expansion potential rather than the expansion probability which is directly influenced by current perceptions.

Another method of assessing the labor force is to examine its major segments to see how it is employed. Figure 2 provides a historic view of the total labor force by sectors. The agriculture sector is impressive not because of it is so large but because it is so small. Contracting over the span of the displayed years to a level of approximately three million, the agriculture sector, producing crops for both domestic and foreign consumption, is about half the size of the unemployment sector.³

The number of workers in the industry sector has remained relatively stable at nearly 30 million. The largest increase in any sector has occurred in the services area. Services, which include government and finance, is an expected growth area in a mature economy as consumers seek quality of life improvements provided by services rather than more goods. Viewed together, the industry and services sectors appear to indicate that the US economy is devoting a greater percentage of its resources to softer areas of investment which provide less in the way of measurable national strength. This view is tempered by the fact that the

Figure 2
Total US Labor Force
(In Millions)



SOURCE: DEPARTMENT OF LABOR
BUREAU OF LABOR STATISTICS

industry sector has continued to grow in absolute size and is also the recipient of greater amounts of automation than the services sector.

A collateral aspect of the labor force of the industrial sector is the status of the production base. Just as there are factors that affect the potential labor force size, there are factors that affect the means of production. Unused plant capacity has hovered around the 20 percent mark throughout most of the 1970s. The current aggregate figure is approaching 30 percent in reaction to the 1980 recession and subsequent weak recovery.⁴ This unused capacity provides an immediate production reserve that could be drawn upon in a crisis. The other side of the coin is the continual aging of the US production base. With reinvestment running at 6 percent there is a strong likelihood that reinvestment is not keeping pace with equipment depreciation-- depreciation from actual use of equipment or from technological obsolescence. True reinvestment requirements are difficult to determine however, the change in the investment trend from 16 percent in the 1960s to the current low indicates that the rate of growth in the US production base is decreasing.

The overall picture presented by this examination of the economy base is that in absolute terms the US economy is strong and has the potential, especially in labor and capital, for even greater capacity. The caveat is that this is a long-range perspective, and at any specific moment the

economy may appear considerably weaker because of various cyclical phenomena.

Major Cyclical Influences

The most familiar of these cycles is the business cycle. The interesting aspect of the following four business cycles occurring since 1964 is the unique character of each: the length of the expansion period starting in 1964; the shallow drop experienced in 1971; the OPEC-induced recession in 1974; and the precipitous fall in key indicators in 1980 followed by a rapid but incomplete recovery. Throughout this period the inflation rate continued to rise ominously during both recession and recovery phases. The significance of the business cycle to Government demands on the economy centers on loss of production and siphoning off of Government revenue during recessionary phases and the competition for resources and means of production during expansionary periods.

Investment, the expenditure of current assets to ensure future output, is affected by, but independent of, the basic business cycle. It is independent in that investment is directed to the future in a combination of output and means of production expectations. The current phase of a business cycle may have some effect on future production goals but only a secondary effect; the more stable long-term trends are the major determinants of production. Because of the sporadic nature of such

advancements, investment patterns may be out of step with the business cycle.

There is a growing concern among economists that US investments are falling behind, threatening future long-term production capabilities. The post-WW II industrial modernization of Japan and Western Europe set the stage for the current world competition in such basic industries as steel, aluminum, and fabrics. This competition is matched in manufactured goods such as electronics, automobiles, and clothing. Continued failure to modernize United States production facilities can only widen the gap between the US and its major industrial competitors. Our current investment rate is only half that of Japan and about 60 percent of West Germany. While the absolute size of the US production base will continue to exceed its closest competitors for a number of years, major reinvestment is required if the United States intends on maintaining its position in basic metal production, automobile manufacturing, and in energy sources. This reinvestment need is not driven by the business cycle but by the intensity of the competition and the real depreciation rate of the current equipment.

If future expectations provide the motivating force behind investments, availability of investment funds supplies the life blood. It is in the fund market where imbalances in government spending have impact on the investment cycle. Government expenditures in a deficit phase of

government budgeting can crowd out private investment by raising interest rates to a point where the discounted expected rate of return is unable to match the current "cost of money." The unusually high interest rates present in US financial markets since 1971 have resulted in lower investment rates. Deficit spending on the part of the Federal Government shows signs of continuing as a result of lost revenue and increased transfer payments stemming from another recessionary phase in the business cycle.

The third cyclical influence is brought about by military expenditures. Every sovereign nation diverts resources to military production and thus denies these resources to other users. The effects of this action can be similar to the effects related to the investment cycle in that it is government expenditures crowding out private production. It should be kept in mind however, that Government use of resources may have little crowding out effect if it is idle resources or production capacity that is being employed. To the contrary, there may be a stimulation of industrial production as Government orders result in plant construction that may have domestic application. The counterarguments to this line of thinking point to the nonproductive nature of military investments.⁵

There is considerable difficulty in constructing an economic model to effectively measure the impact of military expenditures because of the

numerous second and third order effects brought about by such spending. Obviously, expenditures on the scale reached during WW II dominated the national economy. There are reasons to doubt, however, that small percentage changes in a current defense budget that constitutes only 5 percent of the total GNP may be significant to the overall economy. Indications that defense expenditures are to be increased in the near future raise the question as to whether or not these increases will be of such a magnitude as to affect the economy.

The current military cycle does appear to be entering an expansion phase with block replacement of major defensive systems under open consideration. These replacements include the intercontinental ballistic missile ~~submarine-launched ballistic missile~~ (ICBM) force, the main battle submarine-launched ballistic missile tank, (SLBM) submarines, intratheater transport aircraft, and a host of subsystems. Major force expenditures on this scale would be comparable to the strategic force build-up of the late 1950s and the Vietnam expenditures in the 1960s. However, from the viewpoint of military expenditure cycles, the replacements now under consideration would be for systems acquired in the 1950s rather than the 1960s. Through estimates of the design life of the new systems, both military and economic planners can reasonably predict the timing of the next military investment cycle.

Demographic Trends

The third factor having an important part in determining the economy's vitality and character is the trend in US demographics such as population aging, urbanization, and demands for services. Without going so far as to make predictions, one can suggest some outline of what demands will be placed on the economy.

The graying of America is a phenomenon that started in the 1970s and will accelerate throughout the 1980s. As birth rates decline and life expectancy over 65 increases, average age increases will occur. Real population growth is still taking place over and above immigrations, but, current trends point toward a zero population growth rate between 1995 and 2020.⁶ A zero growth rate will speed the increase of average age.

One manifestation of an aging population can be seen in the growing concern over the increasing size of the retired population and the strains it places on the Social Security system. These strains are two-fold for, as the retirement community increases, Government transfer payments increase not only for living maintenance but also for medical expenses.⁷ The medical expense increases are also of a two-fold nature. The first increase is a result of greater numbers of participants drawing medical benefits, and the second increase is a

result of more intense, complicated medical treatment required by the increasingly elderly segment of retirees.

There is an economically beneficial aspect of this aging trend in our population. Projections of the current population through to 1990 indicate that the labor force will increase by 15.1 percent. This increase outpaces the expected overall growth rate and thus decreases the population-to-worker ratio. A key point to remember, however, is that a larger labor force is an economic plus only if the labor force is employed. Unemployment or even underemployment can turn a potential economic strength into a liability. Currently the highest unemployment rates are found at the lowest age groups of the labor force. Since the economy has been able to accommodate, up to this point, an expanding labor force without increasing unemployment, it appears feasible for the economy to be strengthened by a growing, aging work force for a number of years.

As the population ages through lower birth rates and increased longevity, current demand schedules such as home construction and education may be considerably altered. Large-scale changes in priorities would be evolutionary instead of revolutionary but could still have a disruptive effect on the economy as resources are shifted away from traditional uses.

A second demographic feature centers on urbanization. The declining role of farm workers, occurring as the total work force expands, points toward increases in the urban work force. The availability of concentrated labor may act as a stimulus to investment spending and eventually translate into economic output. The classic case for industrial stimulation resulting from urbanization occurred in England at the time of the Enclosure Act which deprived a large segment of the agricultural workers of their livelihood.⁸ In today's labor market, downside forces have an artificial base in the form of government regulations and transfer payments which could negate the stimulus created by availability of labor. From an economic viewpoint, it is the potential created by this availability that bears consideration. Artificial constraints, which are superimposed upon a system, can be modified with greater ease than changes in the labor force which are integral to the system.

Urbanization of a different nature is occurring as the population shifts from the industrial Northeast to the South and Southwest Sun Belts. These shifts result in older production centers being abandoned and new production centers being created along with the domestic infrastructure necessary to house, move, and protect a relocated population. A secondary effect of worker relocation is labor flexibility. If workers are able to accept a migratory life style fostered by urbanization, labor as a component of production becomes more interchangeable and therefore improves the economic setting. This availability of labor is also related to the investment cycle considerations presented earlier.

Demographic trends involving aging and urbanization place demands on the economy while at the same time provide opportunities and stimulus to the economy. The long-term implications of population aging include unprecedented growth in the retirement sector and decreasing demands for programs associated with the very young. Urbanization may provide an economic stimulus by creating new demands for housing and services and by providing a more geographically flexible labor force. A negative aspect of the movement from traditional industrial areas to the Sun Belt regions is that some production capability may be abandoned before it is fully depreciated in an economic sense.

The Budget Foundation

Throughout this chapter a number of factors have been presented in an effort to provide an overview of the US economy. The importance in starting with this basic overview is that each Government agency, in its effort to sustain its own existence is ultimately dependent upon the strength and vitality of the economy. The Government budget draws its revenue from the economy and must consider the long-range economic outlook in the development of its plans.

The measures examined in this chapter weave a complex pattern of the economic fabric. In absolute terms, the United States will remain the strongest economic power in the world for at least the remainder of the century. The gross measures of total production, labor, finance, and industrial base support this assessment, ~~however~~ recent trends in some measurements ^{however,} present a more somber picture. Declining rates of growth in productivity, investment, and industrial output coupled with high inflation rates may portend economic decline in the future. Key to any assessment of economic strength is to keep in mind that beyond the measure of absolutes one is dealing in potentials--potentials that are dependent on numerous internal and external factors.

This brief view of the US economy contains no attempt at estimating the size of the secondary or underground economy--that economic activity that goes unreported and untabulated yet in reality increases GNP. Although the size of the secondary economy in the United States is difficult to determine, it would appear reasonable to suspect that, as Government involvement in the economy through taxes and regulation increases, there would be greater incentive for individuals to employ secondary economy methods such as barter services, home labor, and cash transactions to avoid higher costs. The significance of the secondary economy is that actual economic strength is underestimated in domestic calculations. (Comparative international calculations may not be affected to the same degree because of the cancelling effect between states.)

Chapter II discusses the Federal budget, using the size and strength of the economy as a planning base. After describing the character of the US economy and the cyclical patterns that produce fluctuations in the long-term trends, we can more realistically examine the demands and expectations of the Federal budget on that economy. Earlier a distinction was made between expectations being the long-term orientation of investments and production being a phenomenon of the business cycle. Federal budgets consist of current activities based on revenue and expenditures related to current economic conditions. The budget is also based on programs that require long-range calculation of economic expectations. This duality of the Federal budget is central to understanding the important relationship between the Federal budget and the national economy.

I. ENDNOTES

1. Handbook of Economic Statistics 1980, National Foreign Assessment Center, ~~Central~~ Intelligence Agency.

2. The purpose of using variable projected rates of growth is to point out the comparable strength of the US economy under the least favorable, but possible, growth conditions. US growth of 1.5 to 2 percent is the low estimate for US growth in the 1980s and represent a historic low rate. The Soviet rate of 3 percent is a mid-range estimate and the 6 percent estimate for the Third World is a continuation of the 1970s growth rate in general.

3. Data used in construction of Figure 2 was obtained from the US Bureau of Labor Statistics, Department of Commerce. See "Soviet Economy in a New Perspective," Compendium of Papers Presented to the Joint Economic Committee, 94th Congress, 2nd Session, October 1976, by Dr. Murray Feshbach, for a more comprehensive discussion of Soviet labor force expectations and limitations.

4. Specific figures were obtained in the Economic Report of the President Transmitted to the Congress, January 1981. Similar support data is contained in "Economic Indicators, January 1981."

5. The major point presented by several opponents of increases in military spending is the belief that Government expenditures for military goods provide increased income to households without a corresponding increase in available goods. The result of this condition is expected to produce an increase in the inflationary pressures on the overall economy. A somewhat different criticism of increased defense spending is presented in Dr. James Anderson's "Bankrupting America: President Carter's Military Budget for the Next Five Years, 17 March 1980," a report of Employment Research Associates.

6. Zero population growth figures were obtained from Bureau of Labor Statistics projections.

7. Dr. Martha Derthick presented a very full explanation of this dual increase while addressing the National Economist Club in Washington, DC, on 10 January 1980 under the lecture title, "Politics of Social Security."

8. When the English Government passed the Enclosure Act in the middle of the nineteenth century, a large portion of the rural English population found that it could no longer maintain its traditional livestock resources without access to common lands. Whether by design or by accident, the Enclosure Act prompted a population shift to urban areas where there occurred the dual phenomena of displaced laborers seeking

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work and entrepreneurs risking capital in new industrial ventures. There the existence of industry in operation attracted idle workers seeking employment. Thus, the rapidity of the Industrial Revolution development in England was made possible by the mobile work force created by the Enclosure Act.

CHAPTER II

THE FEDERAL BUDGET: REFLECTIONS OF SOCIETY

The budget system of the US Government provides the framework within which decisions on resource allocation and program management are made in relation to the requirements of the Nation, availability of Federal resources, effective financial control, and accountability for use of the resources.

Budget of the United States Government, Fiscal Year 1982

The budget is like an iceberg: By far the largest part of it is below the surface, outside the control of anyone. . . . Budgeting is therefore incremental, not comprehensive.

Aaron Wildavsky¹

The United States Federal budget is truly a monumental compilation of financial data. To attempt to explore every aspect of this perennial, four-part document would be futile as well as unnecessary to the purpose of this effort. Fortunately the US budget document presents a multi-functional approach to the accounting data, which permits specific aspects of the budget to be examined without studying the budget in its entirety.

Because the budget is a declaration of Government priorities and for the most part a predetermined allocation of funds, as expressed by

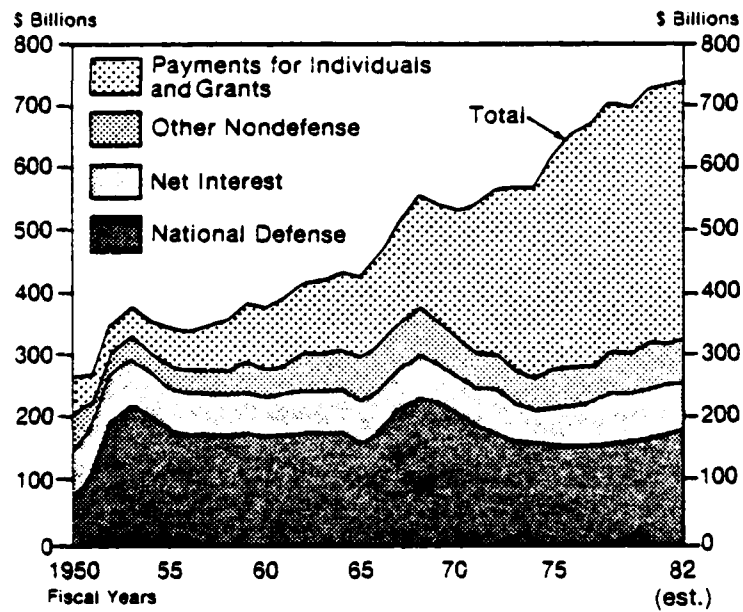
Wildavsky, an examination of broad-based trends is an important first step in understanding and assessing DOD budget issues. The budget has undergone a very clear shift in priorities over the last two decades. Figure 3 reveals several changes taking place in the Federal budget since 1950.²

Major Budget Sectors and Activities

The first feature to examine is the overall growth in the absolute size of the budget. Starting at a little over \$92 billion in 1960 and experiencing more than a sixfold increase to \$579 billion in 1980, Federal Government activity has outpaced inflation rate increases. Since 1970 alone, the budget increase is over 34 percent in constant dollars or real growth. This sharp rise in expenditures should however, be considered in light of the total national economic activity--GNP.

While most administrations talk of planning programs from a goal-to-requirement perspective, political realities force the executive branch into an incremental approach during the budget planning process. Thus large and rapid changes in overall Government spending patterns are distinctively rare--the jump from 8.5 percent in 1929 to 14.7 percent in 1933 or the wartime high of 46 percent in 1944 provide benchmarks for measuring peaks in Government activity. In contrast, during the 1980 budget submission to Congress the Carter administration made a point of

Figure 3
Budget Outlays - Constant 1982 Dollars



establishing a 1983 goal of 20 percent for the Federal budget/GNP relationship. This would be a drop of less than 1 percent from the 1979 figure. Even more impressive is the fact that over the last 20 years the Federal budget has deviated from this reference point by less than 3 percent. Figure 4 displays the overall stability of Government activity within the economy.³ Of notable interest is the actual percentage encountered in 1980 (22.6) and the even higher estimates for 1981 and 1982 pointing out the economic friction encountered in attempting to reduce Government expenditures.

An examination of the budget by sectors as seen in Figure 3 provides a clearer picture of actual Government priorities. The fluctuations in national defense spending are correlated to conflict periods (1953 and 1968 peaks). A more extensive discussion of the DOD budget will be presented in Chapter III. For our purposes now, it is sufficient to observe the general relationship of the defense sector to the total budget and to the social sector in particular. It is the burgeoning growth in the Payments for Individuals and Grants sector that has commanded the lion's share of the budget since 1970.

The largest category of relatively uncontrollable spending is that of payments for individuals. These grew from \$42 billion in the 1967 budget to an estimated \$355 billion in the 1982 budget. This represents an average rate of growth of more than 14 percent per year, or an increase of from about 27 percent in the budget in 1967 to an estimated 48 percent in 1982. The major payments to individuals are social security,

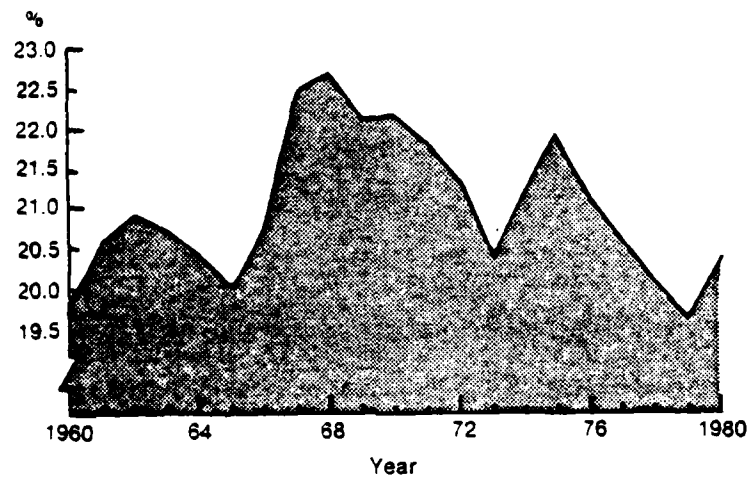
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railroad retirement, Federal employee retirement, unemployment compensation, medicare and medicaid, housing assistance, food stamps, public assistance, and supplemental security income.⁴

As defined in "Setting National Priorities: The 1976 Budget," an outlay is uncontrollable if it is mandated under an existing law or if it represents the liquidation of a contracted Government obligation made prior to the start of the fiscal year. Approximately 75 percent of the Federal budget is uncontrollable when all other outlay in addition to the social programs are considered in light of this definition.

The source of this array of social programs can be found in the wave of legislative actions taken in conjunction with President Johnson's "Great Society" initiatives started in 1965. The proliferation of entitlement programs, coupled with changing demographic factors, and capped by an OPEC-induced world economic downturn have all aided in producing a situation in which the current budgets are being dominated by the social spending sector. The most significant aspect of this environment is that most of these programs fall under the protection of entitlement legislation and have provisions for indexing relative to inflation. Without rescinding legislation--a difficult maneuver in the face of political reality--the uncontrollable portion of the budget can be expected to continue its growth. Such growth would exert greater and greater pressure on the remaining portions of the budget.

Figure 4
Federal Budget as a Percentage of GNP



President Carter's 1981 and 1982 budget submissions to Congress do reflect in some way the perception of a new set of national priorities. Both budgets provide defense spending increases in real terms--that is, increases beyond inflationary growth. However, the effect of these increases without an accompanying offset in the social sector disrupted the 20 percent budget/GNP goal (a \$48 billion increase in social program costs brought on by economic conditions can also be attributed with some of the disruptive effects). President Reagan is now faced with the problem of delivering on campaign promises to reduce the size of the Federal Government while maintaining "necessary" social programs and at the same time increasing the national military strength. All of this to be accomplished within a balanced budget by 1984. This forecast has the uncanny ring of the 1976 Carter pledge to produce a balanced budget by 1981. What comes to issue is the growing concern over continuous deficit spending and the Federal Government's task of providing increasing services to the public.

Deficit Spending

In the last 51 years there have been 9 budgets producing \$34.1 billion in surpluses and 42 budgets producing a total of \$684.1 billion in deficits. More recently, the last 11 budgets, all in deficit, have increased the national debt by over 41 percent to a total of \$914.3 or over 35 percent of GNP.⁵ Table 1 presents a less frightening view of

TABLE 1

Fiscal and Calendar Year Federal Deficits
(in billions of dollars)

| <u>Year</u> | <u>Deficit by fiscal year²</u> | | <u>Deficit by fiscal year³</u> | |
|-------------------|---|------------------------------|---|------------------------------|
| | <u>Amount</u> | <u>As percent of GNP</u> | <u>Amount</u> | <u>As percent of GNP</u> |
| 1970 | 2.8 | .3 | 12.4 | 1.2 |
| 1971 | 23.0 | 2.2 | 22.0 | 2.0 |
| 1972 | 23.4 | 2.1 | 16.8 | 1.4 |
| 1973 | 14.9 | 1.2 | 5.6 | .4 |
| 1974 | 6.1 | .4 | 11.5 | .8 |
| 1975 | 53.2 | 3.6 | 69.3 | 4.5 |
| 1976 | 73.7 | 4.5 | 53.1 | 3.1 |
| 1977 | 53.6 | 2.9 | 46.4 | 2.4 |
| 1978 | 59.2 | 2.8 | 29.2 | 1.4 |
| 1979 | 40.2 | 1.7 | 14.8 | .6 |
| 1980 ¹ | 73.8 | 2.9 | 62.3 | 2.4 |

1. Preliminary data.

2. Unified budget.

3. Government sector, national income, and product accounts.

budget deficits by examining the deficits on an annual basis. The range is from 0.3 percent to 3.1 percent of GNP over the last 10 years--a seemingly modest amount of budget planning error considering the complexity of the total Government operation.⁶ The question that nags at the issue is at what point does the accumulation of small, "modest" deficits become significant and detrimental to the overall national economy.

First, in defense of those who defend deficit spending, the Keynesian economists who advocate demand economy intervention by the Federal government in an effort to restore national production during recession periods also supported budget surpluses during periods of economic prosperity. The Federal accounts are to be balanced albeit over a long, unspecified period. Government need not and should not be run like a business where annually balanced budgets are equated with sound management and deficit spending are equated with business failure. Furthermore, demand economy intervention are to carry with it the corrective economic actions that would reduce the need for further Government intervention and eventually produce conditions that would result in counterbalancing surpluses.

Others argue that national debt is overblown as an issue because in reality the debt created by the deficit spending is internal to our own economic system. Table 2 depicts the distribution of the US debt by

TABLE 2

Estimated Ownership of Public Debt Securities
(in billions of dollars)

| End of Year | Total public debt securities | | | | | | | | | |
|----------------|------------------------------|--|----------------------|-------|---------------------------|------------------|-------------------|-----------------------------------|-------------------------------|-------|
| | | | | | Held by private investors | | | | | |
| | Total | Held by Govt. Acc ^S X | Held by Fed. Res. | Total | Comm. Banks | Savings Banks | Corpo- rations | State & Indi- Local viduals | Misc. Invest. ¹ | |
| 1967 | 322.9 | 71.8 | 46.7 | 204.4 | 55.5 | 13.2 | 11.0 | 23.6 | 70.4 | 30.7 |
| 1968 | 345.4 | 76.1 | 52.2 | 217.0 | 59.7 | 12.5 | 12.0 | 25.1 | 74.2 | 33.4 |
| 1969 | 352.9 | 84.8 | 54.1 | 214.0 | 55.3 | 11.6 | 11.1 | 26.4 | 77.3 | 32.3 |
| 1970 | 370.1 | 95.2 | 57.7 | 217.2 | 52.6 | 10.4 | 8.5 | 29.0 | 81.8 | 35.0 |
| 1971 | 397.3 | 102.9 | 65.5 | 228.9 | 61.0 | 10.3 | 7.4 | 25.9 | 75.4 | 49.1 |
| 1972 | 426.4 | 111.5 | 71.4 | 243.6 | 60.9 | 10.2 | 9.3 | 26.9 | 73.2 | 63.2 |
| 1973 | 457.3 | 123.4 | 75.0 | 258.9 | 58.8 | 9.6 | 9.8 | 28.8 | 75.9 | 76.0 |
| 1974 | 474.2 | 138.2 | 80.5 | 255.6 | 53.2 | 8.5 | 10.8 | 28.3 | 80.7 | 74.2 |
| 1975 | 533.2 | 145.3 | 84.7 | 303.2 | 69.0 | 10.6 | 13.8 | 31.7 | 86.8 | 91.3 |
| 1976 | 620.4 | 149.6 | 94.4 | 376.4 | 92.5 | 16.0 | 24.7 | 39.3 | 96.2 | 107.7 |
| 1977 | 698.8 | 155.5 | 104.7 | 438.6 | 99.8 | 20.5 | 23.4 | 48.2 | 106.5 | 140.2 |
| 1978 | 771.5 | 167.9 | 115.3 | 488.3 | 94.4 | 20.3 | 19.4 | 63.8 | 113.9 | 176.5 |
| 1979 | 826.5 | 187.7 | 115.5 | 523.4 | 90.1 | 19.4 | 24.0 | 67.1 | 115.5 | 207.3 |
| 1980 | 907.7 | 197.7 | 120.7 | 589.2 | 100.9 | 19.7 | 25.5 | 73.4 | 123.0 | 246.7 |

1. Includes savings and loan associations, non-profit institutions, corporate pension funds, dealers and brokers, certain government deposit accounts and government-sponsored agencies, and investments of foreign balances and international accounts in the US.

SOURCE: Department of the Treasury.

sectors. Readily apparent are the major holdings of US citizens and Federal agencies which have no comparable counterpart in a business analogy. US public debt represents not a mortgaging of the future but a foregoing of current expenditures by one segment of the economy in order to provide expenditures in another segment. The threat of a large public debt is not in the potential calling in of the debt by the holders but rather in the growing cost of servicing the debt burden and rolling over maturing paper at increasingly higher interest rates.

It is in this area of serving public debt that opponents of deficit spending have found a more defensible platform. As already mentioned in Chapter I, deficit spending and Government entry into the money market do exert inflationary pressure on interest rates--the crowding out effect. However the Federal Government finances a deficit, the results will be a corresponding increase in the financial assets of households. The problem then becomes one of competition between the Government and the private sector for goods and services and ultimately money unless the Federal Reserve System takes action to increase the money supply.

The coordination of fiscal and monetary policy has never been simple to execute. Point of impact, spending propensities, timing, and execution of time of effect all stress the decision model used to calculate economic repercussion of Government decisions. Since the emergence of persistently high interest rates during the 1970's, the traditional basic assumptions

used in the economic model are no longer operative. Inflation and unemployment rates have risen side by side. Saving patterns are disrupted with the results that fiscal actions are failing to produce traditional results. All of which have produced a growing concern for a return to more stable "conditions."

The various efforts of the Nixon, Ford, and Carter administrations to gain the upper hand in providing fiscal actions conducive to overall national economic goals have proved to be disappointing. Public reaction has manifested itself in a movement toward balanced budgets (Proposition 13 in California and both the 1976 Carter and 1980 Reagan election platforms). Responding to this movement effectively proved too difficult a task for the Carter administration during its short term and offers a considerable challenge to the newly formed Reagan administration. Its starting point is the already submitted 1982 budget and inherited economic conditions in which so much of the uncontrollable portion of future budgets will be deeply entangled.

Current Budget Projections

Any discussion of future budgets forces a recognition of inflation and the changing value of budget entries based on time. Since 1967 the Consumer Price Index has risen by 167 percent; that is, an item costing \$1.00 in 1967 now costs \$2.67. While there is some impression created

with an overall price increase of this size, it is in specific capital goods production found primarily in construction, machinery, and weapon systems that the impact is most pronounced. It is in these areas that outlays are spread over several years with consequently greater and greater distortions in total costs occurring as inflationary adjustments are recorded. When inflation rates average 10 percent, basic costs will double in less than 8 years, a typical span for developing a hydroelectric project or an item in the military inventory.

One method of reducing the confusion over program costs is to reference costs in constant dollars. This is usually done in contrast year dollars with subsequent authorization year costs being converted to base year figures by mathematically eliminating the effects of inflation. The utility of such manipulation is that management efficiency can more easily be evaluated. However, current budgets and current outlays are made based on current dollars and not constant 1972 dollars. There is a psychological impact associated with a \$100 million B-1 airplane, a \$1 million XM-1 tank, or a \$2.5 billion aircraft carrier price tag. The impact is even greaver to a Congressman who may hold a committee membership for 10 years or more and who is therefore familiar with the original unit costs. Although cognizant of increases resulting from inflation, the growth in various budget items and sectors do have a shock effect--President Reagan's reference to the national debt approaching one trillion dollars during his speech before Congress is a recent example.⁷

A key role of inflation in the current budget projections is the narrow path that the Office of Management and Budget (OMB) must walk in projecting inflation rates for the budget planning years. There is a strong motivation to keep projection rates low in order to prevent a self-fulfilling prophesy from occurring. If the Federal Government projects a high rate of inflation, an additional support for cost-push inflation (to at least the projected rate) will be generated as both labor and business segments of the economy attempt to keep up with the new announced, thus official, rates. Even if the projected inflation rate was originally too high, public reaction will push the actual rate to the predicted level.

There are also hazards to making a projection too low. A low projection will result in multiyear programs experiencing cost overruns in the out-years. The consequences of these overruns can be delays in programs as supplemental funds are sought from Congress, the curtailment of other programs to fund the priority items (keep in mind however that the programs from which funds are "borrowed" are also undergoing similar problems as inflation rate projections are impacting on them, thus borrowing from them produces a second drain on their budget), production delays or stretching out to subsequent years, or a combination of these actions. All options represent disruptions to the original budget and create additional costs.

In an economic environment of 10 percent inflation rates, under projection causes severe problems. Recent errors in the estimates have exceeded the actual inflation rates recorded in the mid-1960s. These errors are on the low side and have resulted in stretch-outs, cancellations, and ultimately higher cost for many multiyear programs.⁸ The projected inflation rates contained in the 1982 Carter budget submission and in the Reagan program for economic recovery are 8.8 percent in 1982 and 6.0 percent in 1986 for the former and 8.3 percent in 1982 and 4.9 percent in 1986 for the latter. If these rates prove to be optimistic, continued and increased disruptions in major programs can be expected. (If these estimates turn out to be higher than actual inflation, much of the Reagan out-year budgetary problems will be solved. This after-the-fact comparison should not be confused with the previously discussed high inflation rate projected prior to the economic reaction.)

Other estimates play an important part in the budget process. These include entitlement programs and legislation, and employment/unemployment rates. Entitlement programs are tied to existing law and do not require annual appropriation action by Congress. As such, they fall under the broader budget category of uncontrollable expenditures mentioned earlier. Their role in current budget projections centers on the administration's ability to estimate the number of participants and the program increases due to price indexing. Legislation controls the

eligibility requirements while employment rates determine the specific number of people involved in the program. Inflation, again the bane of the budgeteer as well as the general economy, is the crucial ingredient for the indexing of the specific program outlays.

President Carter was able to move a reconciliation bill through Congress that consolidated some of the entitlement programs. President Reagan has spoken of a more comprehensive reconciliation bill that would further consolidate and in some cases reduce certain entitlement programs. The ability of the new administration to successfully curtail the overall effect of current programs calls for a risky degree of speculation rather than the projection of current law spending patterns.

Under current law, the outlay estimates for benefit payments for individuals will continue to rise in both current and constant dollars and at a faster rate than the total Federal outlay rate for the same period.⁹ Once again, the indexed programs are tied to an administration forecast of the inflation rate and therefore run the risk of being underestimated. Setting this risk aside, the growth in payments for individuals is of major significance.

Over 85 percent of the projected growth in total current law spending for 1980-1985 occurs in benefit payments for individuals. Social security, which constitutes one-fourth of the total federal budget dominates the projected increases on a dollar basis. . . . Most of the projected real growth results from population and demographic changes.¹⁰

Whereas social security and related programs constitute a significant portion of Federal outlays, unemployment, at first glance, appears to play a much smaller role in the budget process. However, unemployment attacks the budget on two fronts by not only increasing entitlement outlays but by reducing Government receipts. The projected decline in unemployment from 4.1 million in 1981 to 3.4 million in 1982 is expected to save \$2.0 billion in unemployment compensation. On the receipt side of the ledger, a 1 percent decline in the unemployment rate could be expected to increase Government revenues between \$10 to \$26 billion over 2 years depending upon the productivity and placement of the increased labor.¹¹

The caution arises, however, when the Federal budget projection for employment is examined. The budget outlook is based on the proposals contained within the budget submission--not necessarily on what the Congress will eventually legislate, authorize, and appropriate. External events such as natural disaster, technological progress, or change in the foreign environment do not enter into the budget assumptions, yet they can and do play an important role in altering the basic economic setting and the entitlement/employment environment.

The result of the budget formulation process being unable to forecast these external events is that the out-year budgets may be based on an overly optimistic set of employment assumptions. As the out-years are

eventually reached and the assumptions fail to materialize, the potential for disruption in multiyear programs increases. In the budget planning process, policymakers assume adherence to their plans. Any other intent is illogical. A disruption or program deviation from that plan would therefore produce economic inefficiencies. This conclusion is not based on the assumption that the planning budget can never be invalid but rather on the fact that the Federal budget, being a comprehensive plan, sets many forces into motion, and, once in motion, the programs are interconnected to the entire structure.

The Size of the Pie

Throughout this entire chapter, a linkage has been drawn between the national economy and the Federal budget. Both the economy and the budget are intimately related to each other. Through an evolution of laws and practices they will remain linked as the Federal Government is called on to meet the demands of an economically maturing nation holding a central position in the international arena.

The task of preparing annual budgets is complicated by a growing portion of the budget being predetermined by previous legislation and contracts. These "uncontrollables" place greater and greater pressure on the remaining discretionary portions of the budget. The largest of these discretionary sectors, defense, is under continual threat of reduction as

administrations attempt to respond to an apparent demand for reduced deficit spending and general economic improvement at the same time.

Chapter III will examine the DOD budget by first considering the force structure of the military and the direction of the building programs. In addition, it will explore that budget process used in developing the DOD budget. Finally, it will examine the out-year planning environment with a focus on program requirements and their associated costs.

II. ENDNOTES

1. Aaron Wildavsky's The Politics of the Budgetary Process (Boston: Little, Brown, 1979), 3d ed., provides a solid background for viewing the allocation process and the foundation behind incrementalism in the annual budget process. "The Science of Muddling Through," Public Administration Review, XIX (Spring 1959), by Charles E. Lindblom, presents a full but uncomplicated assessment of rational and incremental approaches to policymaking well worth reading.
2. Figure 3, displaying Federal budget outlays, was constructed from The United States Budget in Brief, Fiscal Year 1982, p. 19.
3. Figure 4, displaying Federal budget as a percentage of GNP, was constructed from data contained in DOD's Annual Report, Fiscal Year 1982, by Harold Brown, Secretary of Defense, p. 317.
4. The United States Budget in Brief, Fiscal Year 1982, p. 26.
5. "Deficit Spending--A Hard Habit to Break," US News and World Report, 19 January 1981, p. 58-59.
6. Table 1 was developed from data presented in The United States Budget in Brief, Fiscal Year 1982, p. 89.

7. President Reagan addressed a joint session of Congress on 18 February 1981 wherein he presented "America's New Beginning: A Program for Economic Recovery." He referred to the national debt by calling attention to its approach to the \$1 trillion level. He used this dollar amount to stress his point and let the statement stand as being sufficient unto itself that \$1 trillion somehow added a much more significant weight on to the economy than merely the 1982 incremental increase over 1981.

8. The Congressional Budget Office estimates that inflation rates will exceed the Reagan administration planning estimates by 2 percent with a subsequent cost increase of \$136 billion over the next 5 years in just the DOD budget.

9. See Figures 3 and 4 on p. 26-27 of Five-Year Budget Projections: Fiscal Years 1981-1985, A Report to the Senate and House Committees on the Budget, Part II, February 1980, Congressional Budget Office.

10. Ibid., p. 25.

11. Ibid., p. 18.

CHAPTER III

DOD INVESTMENT PLANNING AND PROCESS

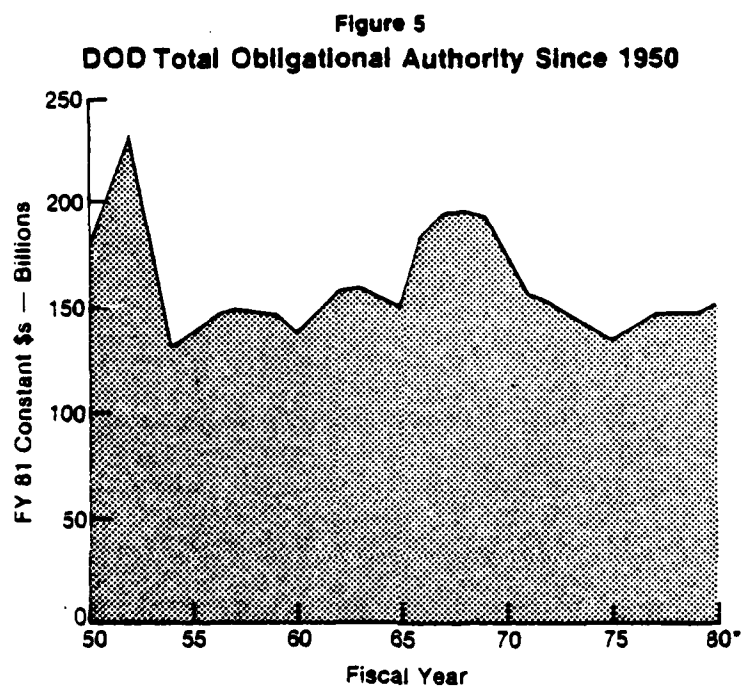
It was the Republicans who cut defense, Mr. Carter told Mr. Nunn. Senator Nunn looked at the President and said, "Mr. President, if we go to war it is not going to be with the Republicans."

Charles W. Corddry

Force Structure--The Long Drawdown

Just as GNP provides a starting point for examining the national economy, Total Obligational Authority (TOA) provides a basic perspective on the relationship between the military structure and national priorities. TOA, the annual budgetary resolution between the President's budget submission and Congressional control over the national treasury, has not followed a readily apparent trend in either growth or contraction.

Figure 5 displays the changes in TOA and actual outlays since 1950 and clearly shows how volatile DOD budget trends have been over an extended period.¹ In addition to the conspicuous increases caused by the conflicts in both Korea and Vietnam, there are discernible spending cycles that can be associated with the strategic build-up in the 1950s and the more recent modernization and readiness corrections in the post-Vietnam period. Perhaps the most interesting revelation is the long, steep decline in DOD budget levels from 1968 to 1975. Not only was this a decrease from the spending levels of the Vietnam years but it represented a more significant contraction of DOD activities.



*FY 80 IS BASED ON ESTIMATED INFLATION

Previous contraction periods did not fall below preceding cycle lows, as can be seen in the 1960 and 1965 nadirs. The 1968-75 decline, also noteworthy for its 7-year length, resulted in DOD spending being reduced to its lowest level, in constant dollars, since 1951. The overall drop was more than 30 percent from the 1968 high. The significance of the length of decline is that the effects are cumulative, therefore more lasting than short contractions. The two cycles prior to Vietnam were not only shorter but also of relatively modest change from peak to trough providing a more consistent budgetary environment.

Although the withdrawal from Vietnam did allow for some reduction in spending, the anticipated "Vietnam Bonus" did not materialize--at least not for DOD. The Vietnam conflict was not only a consumer of supplies but also of assets. Huge stores of bombs, ammunition, petroleum, and numerous other supply items were purchased and expended. In addition, the operating life of aircraft, ships, field pieces, and the seemingly endless list of items that in toto makes up the conventional force structure were aged beyond their years. (A portion of the strategic force, in the form of B-52 aircraft, were converted to conventional conflict roles which may have impacted on the strategic force as well. The converted planes were older models, however, and may have ended up with a reduced strategic role regardless of events in Vietnam.) Even while contraction was taking place, procurement of

equipment became necessary--not only for modernization of the force to enable it to fulfill tomorrow's mission, but for current systems to provide fighting capability in the near term.

By 1975 the contraction process was complete. Personnel strength had fallen by more than 1.4 million to a level of 2.1 million active duty members. The Air Force had reduced its total aircraft inventory by retiring a large portion of its propeller-driven and support aircraft. The active fleet of the Navy was down to 416 vessels--a 50 percent reduction from 1968, and the Army returned to 16 active divisions from a high of 19 in 1968.² These were the easily quantifiable measurements, but not exclusive effects of the contraction.

Not tabulated but of equal concern was the depreciation of the plant assets or facilities of the Services. The task of fulfilling their mission, modernizing and replacing assets expended in Vietnam, and maintaining the weapon systems retained in the inventory increasingly cut into the Services' ability to repair, replace, or modernize its facilities. This last spending area was deferrable, therefore took a back seat to the more imperative spending needs. Although planners were aware of the efficiencies presented by preventive maintenance, they accepted the penalties of foregoing such a program as a necessary evil in order to preserve as much of the fighting force as possible. Even though the force structure contraction process did free up some budget funds, this

was a limited cushion that was insufficient to counterbalance the repeatedly lower budget from 1968 to 1975.

Being able to "do more with less" implies that the current structure and methods contain wasted resources. After budget planners spent 7 years of purging the system of the least efficient and most obsolete pieces of equipment, further contraction may prove detrimental to overall effectiveness. At some point it will take "more to do more." Again, this is easier to quantify in regard to weapon systems yet, it is equally valid in regard to facilities. Avoidance of expenditures in housing, hospitals, maintenance depots, and other facilities cannot be put off indefinitely.

Stabilization of the Force

The 1976 budget stopped the declining trend in defense spending. The \$4.7 billion TOA increase was a real dollar increase of 3.6 percent. This was followed in 1977 with another increase of 4.6 percent, minor decreases in the next 2 years of less than 1 percent, and a 2.9 percent increase in 1980. The DOD budget was now back to the same purchasing level it had held in 1966. But its relationship to other components within the economy had undergone drastic change. The 1980 DOD budget now equalled only 22.9 percent of the total Federal budget and 5.2 percent of GNP, whereas in 1966 it was equal to 40.2 and 7.5 percent, respectively of those same components.³ The use of 1966 as a contrast point is convenient because

it follows the second wave of strategic spending and precedes the peak Vietnam spending by 2 years thus represents a more "normal" or stabilized budget during the 1960s.

There are other noteworthy comparisons with the 1966 budget. First is the change in the personnel force. The active duty force declines have already been mentioned as being over 1 million from 1968 to 1975. From 1975 to 1980, the declines tapered off to a gradual loss of only 77 thousand, less than 1 percent each year. However, while the personnel force was greatly reduced from its previous levels and was now stable, its absolute cost and share of the total DOD budget had grown significantly.

At the peak of the Vietnam period, military personnel costs consumed 27.5 percent of the budget. In 1980 this same account cost over \$22 billion more than the 1968 budget and represented 30.1 percent of the budget. A major portion of this increase can be directly attributed to the establishment of the All Volunteer Force in 1973 and the concept of pay comparability instituted in an effort to make the program successful. Other aspects warrant recognition in order to more fully understand the personnel cost increase.

First is the common use of percentage of total budget as a measure of cost. If other expenditure areas are being drawn down faster than

personnel, then it is quite logical that personnel cost will take an increasing portion of the budget. In addition, if personnel pay costs are linked to inflation rates and those rates hold at historic high levels, then a stabilized force will command a higher percentage of the budget. One of the criticisms of the military in the latter half of the 1970s was this high budget percentage being spent on personnel. It is difficult to see how this state could be changed without doing at least one of three possible options: increase the total budget by expenditures in nonpersonnel areas; decrease the force even further; lower the current pay scales to an earlier level. None of these was acceptable. (The reduction in personnel cost percentages was accomplished in the most recent budget through increases in nonpersonnel area expenditures despite continued increases in pay scales and a slight increase in personnel numbers. However, this increase in nonpersonnel spending was in response to a demand for more equipment with changes in personnel cost percentages being a consequence and not a motivator.)

Several other events regarding force structure during the 1975-80 stabilization period deserve attention. First is the tactical aircraft modernization program. The procurement of the major portion of new tactical aircraft was completed during this period. The Air Force equipped many of its attack squadrons with A-10 aircraft and placed its reliance on a "hi-lo" mix of F-15 and F-16 aircraft to meet the counterair requirements. The Navy, in a similar move, equipped its carrier battle

groups with the F-14 long-range fighter. It is important to stress that these systems were actually procured because, while many systems were in various stages of development, few systems contained in the out-years of the Extended Planning Annex were added to the inventory during these years. The actual year-by-year production is another issue that will be addressed in Chapter IV. The critical point to recognize in regard to these acquisitions is that they form the tactical aircraft structure out to the end of the century--and create the personnel, logistic, and operations and maintenance (O&M) demands for these same years.

It is this notion of legacy that should constantly be kept in the forefront of investment planning. Today's acquisitions are the generators of future O&M requirements which must be met to make the systems effective. The key consideration is to strike an optimum balance between the size of the current acquisition program and the expected cost of maintaining those systems in the future. A final aspect of this notion of legacy is system life and the timing of replacements.

If whole categories of systems are acquired at one time, there is a danger that they will require replacement at the same time--a condition that may be most difficult to meet in the event that this falls in coincidence with other equally pressing budget demands. A related problem is the acquisition span for any one system and the possibility of block

obsolescence. (This is a phenomena of equipment wear-out rather than technological change and can therefore be mitigated by certain management practices.) It is this set of problems that forms a major portion of the impetus to restructure the current force.

Restructuring for 1990 and Beyond

In addition to the internal factor of inventory replacement, there are other factors external to the current structure that have an effect on the restructuring effort. Just as the 1975-80 period can be viewed as a transition period in budgetary terms, it may also be viewed as a transition period with regard to Soviet capabilities. It was during these years that the Soviet military objective was seen as changing from one of parity to one of superiority.

The Soviet Union has, in general, maintained a large conventional ground and defensive force since the end of World War II. However, while the United States was engaged in the Vietnam conflict, the character of the Soviet forces began to change. To the masses of artillery, armor, and individual firepower already contained in their force structure, frontal aviation was energized with a new capability to take the air war to a point beyond Allied lines.⁴ This extension of the combined arms concept carried strong implications for US thinking on how it would meet

a Soviet/Warsaw Pact attack in Central Europe. Allied air assets would be spread disconcertingly thin by the need to now defend rear echelon areas previously beyond the range of Soviet attack aircraft. Range was not the only improved feature of Soviet airpower. They were also developing a degree of all-weather capability albeit small, which, when coupled with the more institutionalized all-weather capabilities of the ground forces, presented NATO with a much more formidable attack problem. This was not the only initiative they were taking in the area of conventional forces.

Soviet naval strength has been building over an extended period. Aside from their strategic submarine fleet, which continues to show the enhanced effects of large research and development investments, surface forces are growing in number and displacement. This "blue water navy" presents a real challenge to the US fleet in a force-on-force situation but more importantly threatens the North Atlantic and oil-laden Indian Ocean sea lines of communication. Much of the US fleet firepower once planned for use in the land engagement must now be diverted to the countering of opposing fleet capabilities. The entry of the Soviets into aircraft carrier operations, nuclear-powered surface ships, and underway replenishment operations appears, by open evidence, to be more than just experimentation. Their movement into these operational areas acts as a stimulus to US naval requirements.

Soviet efforts in strategic weaponry, visible in almost every area, have produced a major change in the US/Soviet relationship. The 1972 SALT agreement, used as a benchmark, identifies the status of the Soviet Union as a superpower if not on a parity with the United States. In the subsequent years the Soviets have continued to develop and produce strategic weapons and strategic delivery systems with greater capabilities. From 1975 to 1980 the Soviets moved ahead of the United States in several strategic measurement areas and are approaching the United States in the remaining areas. Whether the Soviets have surpassed the United States in total strategic capability is an issue still under debate; however, the existence of the issue alone is significant and points out the very real change in relationship since 1972.

Some of the specific improvements on the Soviet strategic arsenal affect the United States view of the adequacy of its own forces. By developing a multiple independently-targetable reentry vehicle (MIRV) technology and improving missile accuracy, the Soviets have threatened to make the United States land-based strategic systems vulnerable to a first strike. Soviet space systems have demonstrated a capability that threatens our surveillance satellites. Nuclear submarine programs go on unabated with larger submarine-launched ballistic missile (SLBM) boats providing larger patrol areas and attack submarines being produced with important advantages over United States submarines (diving depth and speed).

Together with complementary programs which include the SS-20, Backfire bomber, and an unmatched air defense system that may possess some missile defense capability, the Soviet strategic posture has forced the United States to reevaluate the adequacy of its own strategic systems. While some would argue the merits of applying the zero-sum game concept to US/USSR relations, the capabilities of one superpower do affect the force posture capability requirements of the other. Soviet advances in force capabilities, both strategic and conventional, do not appear to be stabilizing at their current levels.

Overarching the the Soviet military advancements in specific areas is the concern for their continued military investment in an aggregate sense. The Soviets do spend more than we do in a pursuit of increased military capabilities. Even with the differences in national circumstances which include less per capita personnel costs, command of superior quality resources within the economy, and more austere weapon systems, they still outspend the United States.

Three critical conclusions emerge: Soviet expenditures for defense are larger than ours; they have increased steadily over time; and they absorb a larger share of total national resources than do ours. The comparative estimates show that the Soviet Union spent about 50 percent more than the United States in 1980 using estimated dollar costs. Even using the inherently much more conservative estimated ruble cost, the Soviets outspent us by 30 percent in 1979.⁵

Just as it is important to recognize the cumulative effect of several years of declining US defense budgets, it is important to recognize

the cumulative effect of Soviet outspendings of US defense programs. Despite conflicting views as to the precise comparison of US/Soviet defense spending, there is sufficient agreement that the aggregate advantage for Soviet defense is \$100 to \$150 billion over the last decade. This investment disparity has allowed the Soviets to accumulate forces numerically superior to the United States, but of more current concern is their apparent investment in the future.

Indications of continued advancement in design and continued emphasis on quantity are available. Heavy investment in the research and development area is the "seed money" for future capability. The appearance of first-line Soviet equipment in Eastern European military units is often a sign that Soviet forces will or are receiving more advanced systems. Finally, of a more speculative nature, Soviet sales of inventory weapons to non-Communist states have increased with the implication that these weapons are now surplus as a result of new production.⁶ All of these actions taken together have a major effect on the restructuring plans of DOD for the 1990s.

There are other external factors that affect these plans. In 1973 the OPEC nations set into motion oil price increases that altered the world economic landscape. The initial shock wave, registered in the trade accounts of oil importing nations, was of such a magnitude that fundamental standard of living trends have been arrested in some regions

and even lowered in others. In addition to changing standards of living, the dramatic rise in oil prices and the subsequent unsuccessful efforts of industrial nations to wean themselves from imported oil drove home the realization that they were uncontrollably dependent on oil--Middle East oil--as a primary energy source.

This dependence is also likely to last until the end of the century even if conservation and substitution measures are taken. Perhaps even more ominous is the recognition that current world industrial growth trends are pushing demand levels above production capabilities and thus perpetuating OPEC's ability to control price. The slow acceptance of the oil producing states' claim that the world's finite supply of oil is rapidly being depleted also raises the specter of international competition to the point of conflict for oil resources. Known reserves of oil, overwhelmingly located in the Middle East, take on new significance. The implication of this new view of geostrategic value for US defense planning is a need for force projection capability to the Persian Gulf. This capability is to be in addition to its large commitment to Western Europe and North East Asia.

Several sectors in the current force structure require strengthening. The first area is strategic mobility, to include the airlift and sealift structure necessary to carry forces to the region. Despite the already planned improvements in strategic mobility forces, even greater

capability would be required to meet the long transit times encountered in a US to Persian Gulf route.

Efforts to develop the Rapid Deployment Joint Task Force (RDJTF) have revealed the need for more support aircraft, oil tankers, kinds and numbers of weapons, and even more manpower if the RDJTF is to maintain its mission capability while the US strategy still calls for a structure ready to meet a major war in Europe and a lesser war in North Asia. This translates into more long-range, wide-bodied cargo aircraft, support ships equipped with stores of war-fighting supplies as well as sustaining resources, lighter weight and smaller systems capable of operating in a hostile armor environment, more tactical aircraft, and finally the trained personnel to make the entire system function.

In addition to RDJTF requirements, the increased attention to the Persian Gulf and South West Asia places new strains on US naval forces. The placement of two carrier battle groups in the Indian Ocean has drawn down forces from the Atlantic, Mediterranean, and Pacific fleets. The additional days-at-sea generated by the Indian Ocean patrols have been costly in terms of fuel consumption, equipment depreciation, and to some extent manpower retention.⁷

While the US Navy has not been formally reorganized to permanently establish an Indian Ocean fleet, a routine has been followed from which it will be more and more difficult to disengage as time passes. If large-scale US naval presence in the Indian Ocean is perceived by the world community as a necessary safeguard to US interests, the United States may lose its option of removing this force without a corresponding loss of political strength. Thus it is possible to become trapped in a position of inflexibility by an action originally designed to demonstrate US military flexibility. The final result is the creation of still another requirement for an increased force structure.

The third external factor affecting force structure considerations is arms proliferation. Proliferation has occurred in a number of different ways. The concurrent events of high Soviet production rates, rapid accumulation of wealth by a segment of the Third World, and the desire of Western arms-producing nations to amortize high technology costs over longer production runs have all contributed to the rapid increase in Third World arsenals. This increase is qualitative as well as quantitative. The most visible increases have occurred in the Middle East and Persian Gulf, where both US and Soviet arms sales have exceeded \$50 billion since 1973. Not to be excluded from this lucrative political and economic market, both Western and Eastern European states have also provided substantial quantities of arms to the region.

Other regions have also enhanced their war-fighting capability. The unification of North and South Vietnam in 1975 provided the Hanoi government with a military force that distorts the military balance in South East Asia. The Soviet Union has continued to support the Hanoi government in the form of economic aid and continued modernization of its armed forces. Substantial increases have also taken place in the North African states of Libya, Algeria, and Morocco, while at the same time South Africa has displayed its ability to acquire, produce, and operate modern systems. On a lesser scale but still significant is the improving military capability of several states in South America. No longer content to equip their forces with obsolete US systems, at the discretion of US decisionmakers, they have sought out modern weapons from all sources.

Another aspect of arms proliferation centers on nuclear weapons. Despite US efforts and those of other signatories of the Non-Proliferation Treaty, the number of nuclear-capable states can be expected to increase. The stimulus for this increase is the domestic application of nuclear energy and the competing instincts awakened by the acquisition of nuclear technology by neighboring states. If a nation possesses certain prerequisites (access to nuclear materials, technological competence, and economic wherewithall), it would seem difficult to stop it from joining the "nuclear club." As the number of nuclear-armed states increases, it is feasible that proliferation will accelerate as the current arguments for nonproliferation are mitigated. The implications for US force

structure planning created by nuclear proliferation may prove very costly.

The first implication for US force planning is the need for an improved warning and defense capability. Current warning systems are centered on detecting a Soviet attack coming predominantly over the polar region. While attack from lesser nuclear powers may be quite remote, nuclear-armed nations may be able to exercise a finite deterrence strategy against the United States if its warning and defense force is not strengthened. This problem, although recognized, has yet to command attention in the budget allocation process.

The second implication involves antiterrorist measures designed to counter terrorist use of a nuclear weapon. This is not exclusively a military problem and may call for actions in civil law enforcement and involvement of non-Federal government agencies. Current efforts in this area involve modest budgetary action but may require more extensive planning and use of resources as nuclear proliferation takes place and as the availability of nuclear materials or even weapons is increased.

Together, the internal factor of systematic inventory replacement and the external factors of Soviet military threat, Persian Gulf/RDJTF requirements, and weapons proliferation create the planning environment

in which force structure decisions must be made. There are a number of systems in the process of entering the inventory already, and their existence places a mortgage on future budgets.

In the strategic area, major replacements of new systems are about to revitalize the current Triad force. Trident submarines with Trident missiles will replace the Polaris submarines as they reach the end of their operational life. The MX missile, in a basing mode yet to be determined, is designed to replace the increasingly vulnerable Minuteman missiles. The air-launched cruise missile (ALCM) is the core program designed to modernize the air breathing portion of the strategic force. However, because the ALCM requires a host platform, it cannot act as a direct replacement for the aging B-52 fleet. Continued efforts to maintain the B-52 as a manned penetrator have proven to be costly. The 1979-82 budgets contain over \$400 million for development of B-52 modifications. There is also the caveat that Soviet defense improvements have the potential to render the B-52s ineffective in the 1990s. To hedge against this event, the United States has started development of a cruise missile carrier aircraft program with neither a specific design nor a mission being defined at this time.

In aggregate, these programs cover the components of the Triad strategic system. General David C. Jones, Chairman of the Joint Chiefs of Staff, has expressed his view on the importance of this revitalizing process.

To perform effectively in the decade ahead, US forces must continue to modernize while improving readiness. Within this context, strategic nuclear force modernization should receive the highest priority.⁸

In the conventional force area, current and future budgets will be affected by investments in land, sea, and air assets. Major new force structure programs for the Army include the XM-1 tank, the Fighting Vehicle System, the Cavalry Fighting Vehicle, the Multiple Launch Rocket System, Blackhawk helicopter and the Patriot missile. Together these programs total over \$3.5 billion in just the FY 1982 Army budget. The FY 1982 shipbuilding program as portrayed in Table 3 provides a grand view of the Navy investment program.⁹ The difficulty in assessing such a small (in number of ships) program is that the minor shifts and movements do not provide clear evidence of force planning changes. It is difficult to discern with confidence that this program demonstrates any marked change prompted by activities in the Indian Ocean or force projections into other regions.

Force programing in the tactical air structure continues to emphasize technological superiority. The major portion of the Air Force tactical modernization is complete, with the acquisition of F-15s being terminated in 1983 and the production of F-16s slowing down until the full procurement is made in FY 1990. The A-10 close air support aircraft procurement program was complete in FY 1981, thus, along with the F-15 and F-16 programs, provides the Air Force tactical air assets for perhaps

TABLE 3

FY 1982 Navy Shipbuilding Program

| TYPE OF SHIP | 1982 | 1983 | 1984 | 1985 | 1986 | FY 82-86 Five-Year |
|---|------|------|------|------|------|-----------------------|
| | | | | | | Total |
| TRIDENT (Ballistic Missile Submarine) | 1 | 1 | 1 | 2 | 1 | 6 |
| SSN-688 (Attack Submarine) | 1 | 1 | 1 | 1 | 2 | 6 |
| FA-SSN (Attack Submarine) | 0 | 0 | 0 | 1 | 0 | 1 |
| CV (Aircraft Carrier) SLEP ¹ | 0 | 1 | 0 | 1 | 0 | 2 |
| CG-47 (Guided Missile Cruiser) | 2 | 2 | 4 | 4 | 4 | 16 |
| DDGX (Guided Missile Destroyer) | 0 | 0 | 0 | 0 | 1 | 1 |
| FFG-7 (Guided Missile Frigate) | 1 | 0 | 0 | 0 | 0 | 1 |
| FFX (Frigate) | 0 | 0 | 1 | 2 | 3 | 6 |
| T-AO (Oiler) | 1 | 0 | 2 | 2 | 2 | 7 |
| MCM (Mine Countermeasures Ship) | 1 | 0 | 4 | 4 | 4 | 13 |
| ARS (Salvage Ship) | 2 | 1 | 1 | 0 | 0 | 4 |
| T-AGOS (SURTASS) | 4 | 3 | 3 | 0 | 0 | 10 |
| T-ARC (Cable Ship) | 0 | 0 | 0 | 0 | 1 | 1 |
| T-AK (Cargo Ship Conversion) | 0 | 0 | 1 | 0 | 0 | 1 |
| T-AKX (MPS) | 1 | 1 | 2 | 2 | 2 | 8 |
| T-AKX (RO/RO MAINE CLASS) ² | 1 | 2 | 0 | 1 | 0 | 4 |
| T-AGS (FBM Support Ship Conversion) | 0 | 0 | 2 | 0 | 0 | 2 |
| T-AKRX (SL-7 Conversion) ³ | 2 | 3 | 3 | 0 | 0 | 8 |
| T-AH (Hospital Ship Conversion) | 0 | 1 | 0 | 0 | 0 | 1 |
| T-AFS (LYNESS) ³ | 1 | 0 | 0 | 0 | 0 | 1 |
| New Construction Ships | 14 | 9 | 19 | 18 | 20 | 80 |
| New Ship Acquisitions | 2 | 2 | 0 | 1 | 0 | 5 |
| Conversions | 2 | 5 | 6 | 1 | 0 | 14 |

1. SLEP--Service Life Extension Program.

2. Includes ship acquisition and conversion.

3. Assumes acquisition with FY 81 funding.

the remainder of the century. Procurement, as a percentage of TOA does not appear to have changed radically throughout the 1980-83 period, fluctuating between 24.2 percent in 1980 to 25.6 percent in 1983. Research and development expenditures, the harbinger of future procurement, also shows a marked stability for the same period at about the 9.5 percent of TOA level.¹⁰

Thus, in considering the entire force structure for the 1990s, it would appear that only incremental change, incremental in number and capability--will take place in the conventional force. More dramatic change is feasible in the strategic forces; however, the restraining influence of high cost and strategic arms limitation negotiations may dampen some of the changes in this area. Future planners can expect to face increased procurement costs as the actual strategic modernization takes place and continued high procurement costs as debilitated Navy and Army capabilities are restored. Finally, it is reasonable to expect operation and maintenance costs to increase as the overall size, strength, and complexity of the US military is increased from its 1975 low point.

The Budget Process

Each year, the Service Chiefs are called before Congress to defend and explain the Service programs contained in the current budget being

submitted by the President. The interesting point is that the budget that the Chiefs are defending may be a far cry from the budget originally formulated within each Service staff. There is an evolution in the development of the DOD budget which is a product of an intricate relationship between a number of authority levels within the executive branch. These authority levels within the budgetary formulation process have a set of characteristics distinct for each which in some ways explains the motivations for their actions.

Each of the military services acts as the starting point for construction of the annual DOD budget. First of all, it is the Services that are charged with specific military missions and act as custodian of the assets obtained from previous budgets. It is the Services which will be faced with the task of translating the combination of residual assets and current budget resources into military capability. As agencies within the Government structure, the Services also have parochial interests in the continuation and aggrandizement of their agency budgets. Again Wildavsky provides a summary of this self-serving characteristic:

Not every move in the budgetary arena is necessarily aimed at getting funds in a conscious way. Yet administrators can hardly help being aware that nothing can be done without funds, and that they must normally do things to retain or increase rather than decrease their income.¹¹

The Office of the Secretary of Defense (OSD), although still in the DOD mainstream of mission and responsibility, markedly differs from the military Services. The Secretary and his principal deputies are political appointees and are linked to an architectural framework formed by the President. As appointees, they enter into their position of responsibility laterally, and are not required to have extensive experience in military matters, albeit many appointees have in the past had far ranging experience in government activities that often include the military. This experience, or lack of it, is in sharp contrast however to the Service Chiefs with experience levels usually in excess of 30 years.

Other comparisons with the military Chiefs are also significant. Being political appointees, the senior OSD officials face a finite tenure in office--usually one presidential term, obviously no more than two terms. The implications of this short tenure is that the major focus will be on near-term matters and actions that can demonstrate conformance with the Presidential policy currently being voiced. Finally, there is the "Capstone" role of bridging the separate Services into a single military agency which is different from the function of the Joint Chiefs of Staff (JCS) in that OSD presides over the services while the JCS is more of a lateral functionary of the Services.

The Office of Management and Budget (OMB) has a perspective different from that of either OSD or the individual Services. Its concern is primarily the fiscal aspects of the budget and how each major agency in the Government fits into a total budget framework. Its performance measures reflect a profit/loss or efficiency approach, with mission accomplishment being taken as a given or the responsibility of the specific agency. Whereas the services inherit the system provided by previous budgets, OMB inherits the budgets from the past and is therefore forced to defend incremental changes. While capability is not totally disregarded it is of far less priority than fiscal continuity. Finally, OMB provides a link between Presidential policy and OSD in the form of fiscal constraints and "ground rules." These ground rules can range from a budget ceiling under which the total DOD budget must fit to the inflation rates that planners in DOD must use in projecting out-year costs.

The President has a dual role in the cast of budget actors. He obviously has an initiator or guidance role in that he may provide direct guidance to departments or indirectly through his selection of appointees, who would naturally be inclined to his way of thinking, and through the creation of policy by statements or actions. He is also subject to an eventual accounting role for national capabilities--lack of capabilities is perhaps the more accurate description of this accountability. The exposure of a military weakness will eventually work its way to the

President's doorstep in the eyes of the general public and therefore place pressure on the President to continually make claim of military adequacy--a situation that could inhibit the correction of an actual capability deficit.

The President is also under pressure to balance domestic, foreign, defense, and social programs in an effort to fulfill the public's expectations of modern government. This is a far wider scope of mixed demands than the OSD overseer role to the Services but does bear a relationship to that role. Like the key figures in OSD, the President is faced with a near-term focus of 4 to 8 years, with strong responses to domestic reactions during his first term in office. While this is understandable, the dangers to long-range capabilities of such a focus are made no less serious because of that understanding.

Finally, Congress is an important actor in the budget process for it is Congress which holds the purse strings and actually sanctifies the final budget that annually supports Government and in turn DOD operations. In general there is a different set of stimuli that is operative on the Congressional arena. Although Congressmen may be more inclined to respond to a narrower constituency, there is historically a greater continuity in the membership of Congress. This longevity in office provides Congressmen with a corporate memory and a perspective vantage point more conducive to long-range planning. In between this set of long- and short-range

perspectives there is the presence of political realities that include party loyalties to support, or oppose, the President's programs (which are verified in the budget proposal) and to respond to the near-term needs of one's constituency.

These, then, are the major actors in the budgetary process as it relates to DOD. Other decisionmakers are involved as supplemental or competitive agencies but are not part of the budget formulation core involved with DOD planning or investment.

Actual DOD budget development is encompassed in the Planning, Programing and Budgeting System (PPBS). Although all Federal agencies were tasked in 1965 to adapt to a PPBS process, it is within DOD that this system has taken root and provides the budget planning procedures still in current use. As a system, its focus is on estimating costs relative to objectives. It is objectives or end products rather than system inputs that are sought. This frees up the process to look for alternative means to accomplish the objectives and in turn to provide a fertile ground for numerous types of quantitative, rational analysis.

The PPBS program, although modified since its introduction in 1965, still functions as the central budgetary process in DOD. It continues to act as a bridge between the defining of defense strategy phase, the analysis of force requirements step, and the financial decisions

necessary to achieve the stated objectives. The introduction of Zero-Based Budgeting by the Carter administration had little effect on the process within the PPBS program.¹²

There is an integration effect between the major budget actors that takes place in the PPBS arena. Congress, through the Budget and Impoundment Control Act of 1974, levied a requirement for budget projections beyond the current year. This requirement enhances programing actions and in the process would seem to require a certain degree of long-range planning in order to address out-year estimates. The Office of Management and Budget, (OMB) working under the direct guidance of the President, is assisted by the PPBS process in its effort to construct rationally a total Federal budget. The DOD-prioritized programs and the OMB budget guidelines are the formulating communications between the agencies. Within DOD the planning parameters are contained in both fiscal and policy guidance flowing between OSD and the services at the start of each budget cycle. This guidance is formalized in one of the several documents comprising the annual PPBS cycle that eventually emerges as the DOD portion of the President's budget.

Sequentially, the first document is the Joint Strategic Planning Document (JSPD), a fiscally unconstrained assessment of the military strategy and force structure required, in the view of the Joint Chiefs, to meet the national security objectives. The Secretary of Defense then

prepares the Consolidated Guidance (CG) which contains fiscal limitations for each Service and the rationale for defense programs. The inputs to the CG include the JSPD, fiscal guidance from OMB, direct fiscal and policy guidance from the President, and comments from the JCS and Services obtained during a review to the CG in its draft state.¹³

The publication of the CG ends the planning phase and forms the foundation for the programing phase which starts with the Program Objective Memorandum (POM) prepared by the Services. The POM is an estimate of the force structure needed to meet national objectives as outlined in the CG and within the fiscal limitations of the CG. It is this fiscal constraint feature that pushes the process into the programing phase-- the transition from strategy to systems. The POM is sent to the Secretary of Defense by the Services. It is also submitted to the JCS, where a risk assessment is made and published as the Joint Program Assessment Memorandum which is also sent to the Secretary of Defense (SECDEF).

The SECDEF then proceeds to develop the Program Decision Memorandum (PDM)--the programs that the Services may actually include in their upcoming budget.¹⁴ Thus the PDM leads on to the last step in the PPBS, the budgeting phase. The services prepare budget estimates for the programs contained in the Secretary's PDM which are then returned to the Secretary where Decision Package Sets are prepared. These sets are sent to the President through OMB where the total Federal budget is

constructed. Once the President approves the budget it is delivered to Congress for authorization and appropriation action. However, it is on this Presidential approval phase that alterations may occur that may negate a considerable portion of the sequential, building block process that has been followed in the budget formulation process up to this point.

The President could decide to cut or alter a program within the DPSs submitted by the SECDEF without the Services or the JCS having a full opportunity to appeal that decision. This is an admittedly subjective issue in that the key phrase is "full opportunity" and what is considered adequate time to respond to such a cut. In practice the budget formulation process runs on a demanding schedule that pushes up against the hard delivery deadline associated with the submission to Congress.

If the DOD budget is altered after leaving the SECDEF, the services are at a distinct disadvantage in any appeal action prior to final Presidential decisions. This disadvantage is a function of available time and the authority layers within the DOD structure--Services, JCS, and OSD. In that SECDEF and OMB are likely to hold policy views similar to the President, the arbitration process may lose some objectivity during the defense of a program that was originally contained in the DOD budget. Thus it is possible that much of the strength and advantage of the PPBS methodology could be lost in the last stage changes that sometimes occur at the OMB or Presidential review level.

A Slice for DOD

In looking at the DOD investment and planning process, there is the danger of seeking an unnatural orderliness to the structure. External events have a profound impact on the overall architecture of the defense establishment; so any valid assessment of the establishment's planning continuity or logic must take these external factors into account.

The US force structure experienced a substantial decline in the 1968-75 period as a result of a sustained and steep decline in budget authorizations. These declining budgets followed on the heels of a debilitating war in Vietnam with the unsurprising result that the US force structure showed strains in many areas. Strategic forces aged in all three of the Triad legs. Conventional forces shrank by losses and depreciated by use in Vietnam. Facilities were allowed to depreciate in an effort to channel reduced budget funds into maintaining a portion of the fighting force.

Force stabilization began in 1975 and the process of rebuilding has been taking place slowly with indications that some acceleration may take place in the near future. Because of the long drawdown of the preceding period, all investment areas require budgetary attention, and because each investment area is an essential part of an overall structure, none can be sacrificed without damaging the ability of the force to carry out its peacetime and wartime missions.

The force restructuring decisions facing DOD are driven by internal and external factors. The internal factor centers on the need to modernize and strengthen much of the current force structure. There is also the need to begin an orderly replacement of systems in an effort to prevent fiscally unmanageable replacement requirements from occurring in the future. There is also the consideration of force structure legacy that creates future operation and maintenance requirements in that whatever systems are acquired in the current period will generate servicing requirements in follow-on periods.

Three major external factors affect US restructuring decisions. First is the continuing growth in Soviet military capabilities brought on by their advancements into military fields of activities such as offensive air operations and blue water navy operations conducted with major combatants. Soviet strategic advancements are also of concern as they develop a hard target kill capability combined with MIRV systems. Improving in all three Triad weapon areas, they have shown signs of developing offensive capabilities in space which would further complicate the US defense position.

The Middle East/Persian Gulf region as a source of oil necessary for industrial production places new force structure demands on DOD. The task of defending and operating in this region will require increases in air-lift and sealift forces as well as an addressing of the question of

basic US defense policy regarding the "one-and-a-half-war strategy." If the Middle East/Persian Gulf region is of vital interest to the United States, a RDJTF may have to be in addition to the current force structure and not drawn from it. In like manner, the continued presence of an Indian Ocean fleet would signal the need for increased shipbuilding to meet the global demands on naval forces.

The third factor involves arms proliferation. Proliferation occurs in both technological and quantitative senses. It also occurs in a conventional and nuclear distinction. While this increase in arms availability carries the implication that military options may not be easy to execute in the future for modern states, the more important implication from a force structure standpoint is the increased need for additional defensive systems, a need that will further draw on the budgetary resources of DOD.

Indications of force structure changes are discernible in strategic systems and armored equipment for the Army. The major modernization actions for tactical air forces have been completed and will carry the inventory well into the 1990s. Naval forces, as reflected in the Naval Shipbuilding Program, do not appear to be making dramatic changes in fleet size. However, these programs constitute major procurement expenditures and mortgage future DOD budgets for the fulfillment of these programs and for the O&M funds that will be required to keep them operational.

The budget process by which the entire system is supported is made up of a tiered decisionmaking structure. The complex interrelationship between President, OMB, OSD, and the Services provides for both commonality of function and diversity of motivation. The Service Chiefs are most closely related to the actual systems held at hand to accomplish military objectives. The OMB is primarily focused on the financial aspects of Government operation. The President is charged with managing the overall Federal operation of which defense is only one part. He is also allowed only a relatively short period in which to exercise control and is thus subject to the pressure of viewing events in the near term. The SECDEF, a political appointee of the President, is also subject to this same pressure for near-term results but does have a more focused area of responsibility. Together these decisionmakers seek to allocate resources that will insure near-term and long-range military capabilities.

The mechanism by which this is accomplished is the PPBS process--a mechanism that bridges strategy, inherited force structures, competing forces within the Federal budget, and Presidential policy. It is not surprising that such an ambitious undertaking engaged in on an annual basis is not free from malfunctions and disruptions. Chapter IV will examine some of the more significant problems encountered in the planning and maintenance of the force structure and the financial consequences of altering decisions.

III. Endnotes

1. "The Air Force Budget in Review, FY 1982," p. 3.
2. Department of Defense Annual Report, Fiscal Year 1982, Harold Brown, Secretary of Defense, Appendix A.
3. Ibid., p. 317.
4. See Professor John Erickson's "The Soviet Air Programme," NATO's Fifteen Nations, Aug.-Sep. 1980, p. 17-18, for a full description of Soviet frontal aviation and the recent changes in equipment and tactics.
5. Brown, p. 15.
6. Obviously there are other explanations for Soviet arms sales such as political influences, trade advantages, and the acquisition of hard currency, but the Soviets have shown in the past a reluctance to proliferate first-line equipment. Historically, when first-line systems are put on the market, newer equipment soon appears in the Soviet Union.
7. The unscheduled assignment to these waters of ship's that were due to return to home port, the lack of liberty ports in the region, and the

length of cruises must certainly be factors impacting on Navy reenlistment rates.

8. United States Military Posture for FY 1982: A Supplement to the Chairman's Overview, p. 69.

9. Table of FY 1982 Shipbuilding Program extracted from Department of Defense's Annual Report, Fiscal Year 1982. A note of caution should be taken however when viewing this table. The non-budget year's programs have in recent history proven to be optimistic. In the 1981 program, 19 total new ships were scheduled for 1982 instead of the 14 ships for 1982 presented in the current budget.

10. Calculations for procurement and research expenditures extracted from The Budget of the United States Government, Department of Defense Extract for Fiscal Year 1982, 15 January 1981.

11. Aaron Wildavsky, The Politics of the Budgetary Process, p. 63.

12. PPBS and ZBB are not unrelated. Both focus on objectives and incorporate the use of options, cost analysis, and priorities. It is not coincidental that DOD, the only large Federal agency to retain PPBS in its budgetary procedures was able to adapt to ZBB without the use of a side-by-side budget process--one for internal use and the other (culminating in the same total request) for submission purposes.

13. In practice the CG appears to be a top-down document reflecting the views of the Services in a minimal manner. A portion of this disconnect is created by the widening gap between the force structure requirements presented in the JSPD and the feasible force structure available within the fiscally constrained environment. The utility of the JSPD objective force is systematically reduced as capabilities continue to fall short of requirements.

14. The Services and the JCS have the opportunity to appeal SECDEF decisions before they are finalized through a system of Issue Papers, review and comment procedures, and through appeal to the Tentative Program Decision Memorandum.

CHAPTER IV

CONSEQUENCES OF DEVIATING FROM PLANS

One frequently heard argument against government spending is that by its very nature government is less efficient than the private sector in providing goods and services.

David J. Ott

In his book, Federal Budget Policy, David Ott presents the supporting and opposing views as to the efficiency of Government in providing goods and services. However, it is of little use to argue the relative merits of the Government spending efficiency as opposed to the private sector when discussing national defense. The Government, being the only provider of national defense, receives no challenge from the private sector in providing that service. Thus a more useful discussion should center on where and how the Government is inefficient and the subsequent costs associated with these inefficiencies.

Out-Year Planning: Bow Waves Never Die

The Five-Year Defense Program (FYDP) contains the DOD out-year plans, programs, and budget estimates. A major management problem arises, however, in that the authorizations in any one year do not guarantee that

subsequent years will be funded to meet the FYDP outline. In practice, it is more common for a program to be underfunded rather than totally unfunded in subsequent years. This underfunding can often be attributed to increasing program cost, stronger budgetary competition from other DOD programs, or competition to the total DOD budget from other Federal agencies.

This underfunding can then set in motion a set of program delays that have a tendency to be self-propagating. That portion of the program that is not covered within the fiscal constraints (decided upon at the OSD, Presidential, or Congressional level) is then pushed into the nonbudget years of the FYDP. This shift can in turn disrupt not only other programs but also the original program plans in the next year with the results that a ripple effect takes place. As programs are pushed along into the more distant out-years, their current dollar costs increase creating still further pressure to move the program further out in the next cycle.

Thus the bow wave begins to form. This wave is reinforced and compounded when the purchasing power of the out-year budgets declines. The two primary causes of declining purchasing power are smaller budgets and inflation. Both of these conditions were present in the 1968-75 period which was discussed in Chapter III. As the budgets for each of these years was prepared for final submission to Congress, portions of

programs were delayed and added to the next cycle with the rationalization that although the current budget might be cutting the force structure below required levels, the force structure imbalance would be corrected within the span of the FYDP.¹ Unfortunately the FYDP is not funded as a single program. It is a continuing program document that is funded only one year at a time. The specific programs, especially the size of each program, have no claim on future national resources by their presence in the FYDP out-years.

Another factor, although more subjective, that adds to the size of the accumulating programs is indecision--indecision on the part of any of the key actors in the budgetary formulation process but especially critical at the higher levels. If policymakers cannot reach a decision as to the necessity of a program, the FYDP out-years offer a convenient holding spot to place a program while awaiting the arrival of data or conditions that will impel a decision. This does not imply that there is sinister intent in using the FYDP in this manner. There are numerous reasons for delaying commitment to a program while retaining the option to employ it in the future. However, it is important to recognize that the cumulative effects of program stretch-outs and delays may produce a FYDP that is fiscally unsound when taken in aggregate. Aside from the possibility of overloading the nonbudget years of the FYDP with programs, there is the problem of additional costs associated with the disruption of plans.

Economic Costs

Major force acquisitions are not made in a single year. Just as the development of a weapon system may take years to arrive at the production stage, actual acquisition occurs over a period of years.^{2/} However the planned production rate is derived (either by cost, resource availability, or replacement need), once established, it becomes the most efficient level or rate of production. Subcontracts with suppliers, assembly lines, and the training of workers are all based on an established rate of production. Admittedly, that rate of production may not be the optimum rate possible but this becomes immaterial after resources have been committed to an actual production rate. A factory designed, equipped, and manned to produce 30 tanks a month will be less efficient if its production level is increased or decreased from 30 units a month.

The tendency in recent years has been to decrease production rates, which carries with it additional costs. With decreased production, there is also the problem of skilled labor, already a limiting factor, being further reduced. This could occur as idle workers switch to more stable nondefense production. Subcontractors, affected even more than the primary contractors, may elect to acquire nonmilitary contracts or to give military contracts low-delivery priority. The eventual consequence of these actions is a contraction of the military-industrial base--an

asset that is considered a US advantage mitigating much of the Soviet numerical superiority in conventional weapons. There are important secondary-effect costs that must be added to the primary cost associated with the loss of economy of scale. Idle plant capacity carries an overhead penalty that will be passed on in the form of higher unit cost. This situation was clearly demonstrated in recent changes to scheduled fighter production.

The reduced procurement rates for fighter aircraft in the FY 1981 budget imposed cost penalties resulting in higher unit and overall program costs. These cost penalties fall into two major categories: production rate changes and inflation. Three Air Force fighter production programs were affected by these two penalties: the F-16, F-15, and A-10.

In the F-16 case, the original procurement plan was stretched-out whereby the 1982-85 buy was reduced from 180 to 120 aircraft, while the total program buy of 1,388 aircraft was preserved with 303 units being purchased beyond 1985. The total FYDP cost for the F-16 program from the 1980 to the 1981 budget was increased by \$3,393.7 million. Inflation and production rate change account for \$2,966.7 million--\$1,532 million and \$1,434.7 million respectively--or over 87 percent of the increase.³

Inflation increases result from miscalculations of future rates for planned expenditures and additional compounding of interest rates over a

longer period. The first inflation cost is not a result of a stretch-out decision and would occur even if the original production schedules were maintained. Such is the case in the F-16 program for FY 1981. Stretch-out penalties do not occur until FY 1982, when the production schedule is reduced from 180 to 120 units. The inflation rate error must first be eliminated before an accurate assessment of the stretch-out penalties can be made.

The following information provides a breakdown of the penalties associated with the F-16 production change in just the FY 1981 budget.

| <u>FY 80 BUDGET (\$Million)</u> | <u>FY 81</u> | <u>FY 82</u> |
|---------------------------------|--------------|-----------------------|
| Units | 180 | 180 |
| Procure. cost (PC) | 1,705.5 | 1,685.1 |
| Unit Cost (UC) | 9.5 | 9.4 |
| <u>FY 81 BUDGET (\$Million)</u> | <u>FY 81</u> | <u>FY 82</u> |
| Units | 180 | 120 |
| Procure. cost (PC) | 1,819.9 | 1,392.7 |
| Unit Cost (UC) | 10.1 | 11.6 |
| Design Change (DC) | 18.8 | 12.5 |
| Inflat. Miscal. (IM) | 95.5 | 77.3 |
| Rate Miscal. (add'l.) | 5.6% | 5.6% |
| Adjusted PC | N/A | 1,302.9 ((PC-(DC+IM)) |
| Comparable UC | N/A | 10.9 |
| UC Differential | N/A | 10.9 - 9.4 = 1.5/copy |
| Total Change Penalty | | 180 (1.5 x 120) |

The real cost penalty resulting from the scheduling change is \$180 million and occurs in FY 1982. Corresponding penalties of at least equal

value will occur in FY 1983-85 because of similar production changes. Additional penalties can also be expected to occur as a result of inflationary impacts over a longer period of time.

In the F-15 case, there was a stretch-out in the original procurement plan whereby the 1981 buy was reduced from 60 to 30 aircraft, 30 aircraft to be procured as planned in 1982, and 30 aircraft in 1983--one year beyond the original closeout of the production run. Production was to remain unchanged at 729 for the total program, and at 90 aircraft for the years in question. The total FYDP cost growth for the F-15 program from the 1980 to the 1981 budget was anticipated to be \$875 million. Inflation and production rate change accounted for \$692 million or 78 percent of this increase.

| <u>FY 80 BUDGET (\$/million)</u> | <u>FY 81</u> | <u>FY 82</u> | <u>FY 83</u> |
|----------------------------------|--------------|--------------|--------------|
| Units | 60 | 30 | N/A |
| Procure. cost (PC) | 1,039 | 53.3 | |
| Unit Cost (UC) | 17.2 | 18.4 | |
| <u>FY 81 BUDGET (\$/million)</u> | <u>FY 81</u> | <u>FY 82</u> | <u>FY 83</u> |
| Units | 30 | 30 | 30 |
| Procure. cost (PC) | 747.5 | 845.6 | 659.9 |
| Unit Cost (UC) | 24.9 | 28.2 | 21.5 |
| Design Change (DC) | (14.8) | (14.8) | (14.8) |
| Inflat. Miscal. (IM) | 41.9 | 47.4 | |
| Rate Miscal. (add'l.) | 5.6% | 5.6% | N/A |
| Adjusted PC | 720.4 | 813 | 660.7 |
| Comparable UC | 24.0 | 27.1 | 22.0 |
| UC Differential | 6.7 | 8.7 | 4.7 |
| Total Change Penalty | 201 | 261 | 141 |

The A-10 program changes are more complex in that the production run was to be stretched out for 3 additional years, with an accompanying decrease in units procured in 1981 and the total buy being increased by 92 aircraft. These changes increased the A-10 program costs from the FY 1980 budget by \$1,170.4 million. Inflation (149.4) and production rate changes (140.7) account for \$290.1 million or 25 percent of the increase. Calculation of penalty cost is accomplished for only FY 1981 because of the untrackable interaction between the newly added units and the less abrupt phasing down of the production line.

| <u>FY 80 BUDGET (\$Million)</u> | <u>FY 81</u> |
|---------------------------------|--------------|
| Units | 106 |
| Procure. cost (PC) | 565.6 |
| Unit Cost (UC) | 5.3 |
| <u>FY 81 BUDGET (\$Million)</u> | <u>FY 81</u> |
| Units | 60 |
| Procure. cost (PC) | 471.8 |
| Unit Cost (UC) | 8.0 |
| Design Change (DC) | (28.5) |
| Inflat. Miscal. (IM) | 28.6 |
| Rate Miscal. (add'l.) | 5.6% |
| Adjusted PC | 471.7 |
| Comparable UC | 8.0 |
| UC Differential | 2.7 |
| Total Change Penalty | 162 |

These calculations point out that a substantial cost penalty occurs when the contracted production run is reduced. Such cost penalties can be expected in most other weapon system production schedules and could

carry even higher cost in the narrower fields associated with the high technology missiles and submarines. Two cases involving these systems are the MX missile and the Trident submarine, which have experienced rising cost estimates and delayed in-commission dates, respectively. Although other factors enter into the calculations causing these cost changes, delayed production (and in the case of the Trident a possible reduction in total buy) must bear ^{major} apportion of the cost increases.

The other major cost penalty is inflation. The additional inflation that is incurred because of a program being extended over a longer period of time requires that final year production will be acquired at higher, more inflated prices. This increase may influence decisions on subsequent production rates resulting in further stretch-outs thus creating a continual cycle of cost-increasing events. This aspect of inflation is a result of extending the original production run into later years and is in addition to anticipated inflationary cost increases programed into the planned production run. It is an expense that decisionmakers have elected to incur for a near-term tradeoff--not the case with the annual change in prices over the length of the planned production caused by the existing inflation rate.

Finally, this "additional" inflation is different from the increased prices encountered in the current year resulting from the use of an inaccurate inflation rate in the budget planning phase. Unfortunately

the recent history of predicted and actual inflation rates has been one of low estimates resulting in actual costs running higher than planned costs. The reasons for this tendency to use artificially low rates has already been discussed in Chapter II. It seems unlikely that budget planners can expect significant changes in OMB's approach to this problem because of other, more harmful, disruptions that could take place in the national economy.⁴

The preceding observations should come as no surprise to those involved in the budget process especially in view of the growing awareness of the impact of high inflation rates on long-term programs. It is in essence a near-term versus long-term issue wherein the decrease in expenditures in the current year are considered more important than the increase in total costs incurred in the subsequent years. It is difficult to see how this is anything but a shortsighted view of the problem that becomes detrimental to the overall national well being. It is neither purposeful nor important to lay blame at any one point. It is important, however, to recognize that there is an economic drain and a loss of capability. This loss can be directly attributed to the decisionmakers' (at whatever level) inability to foresee the changes in the FYDP programs that will occur because of underfunding at the time each budget year arrives and the FYDP is advanced.

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DEPARTMENT OF DEFENSE BUDGET PLANNING: A LONG-RANGE
VIEW(U) NATIONAL DEFENSE UNIV WASHINGTON DC RESEARCH
DIRECTORATE J J HOGAN 1982

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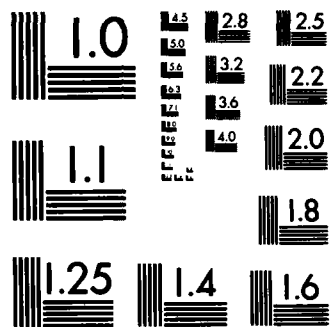


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An authorization process that would cover the entire FYDP would do much to solve this problem with the exception of the cost increases that would still occur because of underestimating the inflation rates. However, this solution would extensively alter the total Federal budget procedures and necessitate changes in the sensitive area of Congressional control of appropriations--both unlikely changes in the current setting.

What is feasible is to instill a longer range view of budgeting throughout the decisionmaking structure in order to bring to light the real total costs rather than focusing on current year savings resulting from production rate changes. There is also sufficient analysis capability to preassess a range of production schedules. As an adjunct to ZBB it may be possible to determine that certain production levels and their accompanying costs are not worth the trade-off in other programs with the conclusion that a program should be terminated rather than stretched-out. Finally, there is an increased incentive to seek programs with shorter development to procurement times which would reduce their vulnerability to budget pressures generated outside the DOD structure.

Disruptions in Coordination

There are other adverse consequences resulting from the deviation from plans. These involve the coordination framework into which the altered program was designed to fit. One disruption is the intraprogram

losses that take place when a program is delayed. (Again the discussion centers on production stretch-outs or reductions rather than accelerations because this is more often the case. War crisis carries its own set of very fluid priorities with monetary cost being of lesser importance than it is during peacetime.)

Stretch-outs or delays in programs affect several planning events such as basing and storage consideration, personnel acquisition and training, and the procurement of the support and complementary systems. These disruptions need not all occur in any one situation. For example, the delay in production of the B-1 bomber, or more correctly the follow-on to the B-52, created a number of intraprogram disruptions as well as incurring additional fiscal costs. (An assumption is taken at this point that some sort of manned, air-breathing platform will eventually be acquired to replace the B-52.)

Until they are replaced, the B-52s must continue in their strategic role. In order to do this, considerable engineering effort must be invested to overcome the problems created by changing Soviet capabilities and even the mere aging of the airframes. There is also the problem of integrating the ALCM system with the B-52 and the expectation that some sort of new airframe will be required to carry the ALCM in the post-1990 period. Together these considerations reinforce the theme of taking a

long-range view of the planning strategy and assessing decisions from this telescoping perspective.

Another example of intraprogram disruption created by program delays centers on the Trident submarine. Although the Trident delay appears to be a manufacturing problem outside the decisionmaking scope of the DOD budget process, it still serves to demonstrate the interrelationship of its program parts. In this case there is the issue of Polaris submarine retirement and the mismatch in the availability of the Trident missile and its firing platform. Because the Trident submarines are scheduled to be placed in new port facilities, the production delays also affect the port construction contract (or result in an idle capacity cost increase).

At another level, disruptions can impact on interprogram plans and result in repercussions on national strategy. Through a combination of events, the F-14 production schedule has been delayed and reduced. These production schedule changes have exasperated the increasing unit cost issue and contributed to the further declines in procurement. The interprogram effect of these changes can be seen in the drive for a hi-lo tactical fighter mix in the Navy with the F-18 acting as the quantitative component of this mix. Recent cost figures on the F-18 however indicate that it is approaching the cost of the more capable F-14 if the original F-14 production rate had been maintained. In the meantime the Navy finds itself with a declining inventory of tactical aircraft at a time when

security requirements are placing additional demands on Navy carrier assets.

This interprogram relationship can also be seen in the already discussed case of the F-15 stretch-out. In this situation, the tradeoff had to be made between meeting tactical fighter wing and air defense force goals because of limited numbers. In view of the Soviet conventional threat in Central Europe and its continuing bomber threat to the US homeland, both goals were of high priority. A consequence of slow assignment of F-15s to the air defense role is the costly extension of F-106 service life which includes not only the aircraft but the associated support equipment unique to that system.

A final impact of disrupted production schedules in the area of coordination involves the concept of minimal program level. This minimal program level is related to ZBB but differs from the fiscal considerations discussed in the previous section. In this usage the focus is on sub-minimal or less than acceptable capabilities. If by reduction, capabilities fall to a level that fails to satisfy the associated strategies, it may be prudent to eliminate the entire program and either seek a like system to fulfill the capability requirement or abandon that approach to the requirement. A "leap frogging" strategy in the evaluation of weapon systems could provide a period of vulnerability, yet this may be more acceptable than the continuing vulnerability of a force structure that is

equipped below a minimum acceptable capability level.⁵

Impact of Delays: Striking When the Iron Is Cold

Another major consequence associated with deviations from program plans is the impact on the relationship of capabilities and design objectives. Just as the FYDP starts with an estimate of requirements based on the external threat, weapon systems are designed to accomplish certain tasks within certain risk environments. The United States has for a long time taken great pride in its claim to technological superiority and more often than not seeks to push the state of the art beyond its current boundaries. Such adventurism cannot be pursued without paying a price. Former Secretary of Defense Harold Brown spoke on more than one occasion about the prohibitive costs associated with obtaining the last 10 percent of capability from a system. He was referring to fiscal costs but there is also another cost--time.

This is different than the previously discussed aspect of time where time, in the form of delays, incurred economic penalties onto the organization. The time aspect on this case involves lost opportunities. As US planners and engineers seek out a new level in technological capabilities there is the temptation to foresake that level when the possibility of even greater achievement comes into view. The process of

obtaining new technology is conducive to having each new enlightenment act as the threshold for still further exploration. This temptation to continue on is not the exclusive property of the technical laboratory. The appeal of faster, higher, stronger or whatever comparative attribute has an insidious attraction to all involved in the building and maintaining of military strength. Such increases in capability are not obtained without the further consumption of time. So, in lieu of producing and possessing equipment designed to meet one threat level, continued efforts are expended on developing equipment that can meet a higher threat level.

A somewhat reverse aspect of the threat environment and program delay relationship is that long delays from the time of design to production may see a change in the Soviet capabilities. What was once an adequate capability for a forthcoming US system may be overtaken by Soviet improvements acquired during the US production delay. This movement or change in Soviet capabilities may be actually independent of US actions or could be the conscious result of Soviet efforts to take advantage of US inaction in an attempt to negate new system capabilities before they reach US military inventories. Although the primary motivation behind every Soviet action remains beyond our view, the existence of substantial delays in fielding new US systems provides them with an important response advantage. One example of this nature is the extensive delay or indecision on the Navy's extremely low frequency communication system

designed for use with the ballistic missile submarines. If that system is eventually acquired, the Soviets will have had a lengthy grace period in which to develop counter plans.

Finally there is the consideration that our allies may change their position regarding a strategy or force plan while the United States is undergoing a lengthy production delay. They may opt to fill the capability requirement themselves which could render the US system as being redundant upon its eventual acquisition. The allies could just as easily perceive that the requirement is artificial or of such a low priority, given US actions, that their support in this area is not and will not be required. Just as in viewing Soviet action, caution must be taken to recognize that actions are normally generated by multiple factors. Allied actions such as the development of a ground defense system and a new main battle tank are also the product of many factors--of which US program delays are a part.

In each of the preceding discussions regarding the impact of delays, the common feature was a changing environment. These environmental changes may occur in the technological arena, in the threat posed by the Soviets, or in the attitudes and actions of our allies. Each of these changes carries the potential of reducing the utility of the program experiencing a delay or stretch-out.

Costs External to the Plan

A key point to keep in mind regarding the FYDP is that, although it is a 5-year program, only the first year receives authorizations by Congress and may be modified in that authorization process. Recent history has shown that the unfunded FYDP years often accrue portions of programs that are underfunded in the current budget year. The results of this action, most noticeable during a period of decreasing budgets, is a growing, self-perpetuating bow wave of programs in the out-years of the FYDP. It is possible that this accumulation of programs could grow to such proportions that it would be fiscally infeasible to achieve in aggregate. These departures from the long-range plan also create other costs in addition to the rescheduling of expenses.

Economic costs occur as economies of scale are either ignored in the original production rate schedule or when production rates are altered after production facilities are designed and constructed. Downward adjustments in production rates also carry with them the adverse effect of reducing the industrial and labor force base of the nation. Stretching out of production runs, a common occurrence in the budget process, results in the additional cost penalty of higher overall inflationary costs.

There are noneconomic costs associated with disruptions in the program plans. Intraprogram losses are linked to delays impacting on facilities, personnel, and support systems. An eventual consequence of these intraprogram disruptions will include additional economic costs, but the most immediate effect is a loss in expected capability. These consequences are also part of the disruption that occurs in the area of interprogram plans. Again the disruption affects more than the single program that has been delayed. The coordination of weapon systems in a military strategy is dependent on various systems being operational and in place at specific times. The effectiveness of an entire strategy may be compromised by the delay in one program component of that strategy.

Lastly there is the aspect of change occurring in the external environment during a period of program delay. No matter what reason the decisionmakers in the DOD budget process have for making deviations from their original plan, there are costs. These are economic cost, effectiveness costs, and time costs. This last category of costs can be used by the Soviets to negate the effectiveness of the US programs that are encountering a program delay. Military coordination with US allies may also be adversely affected with equally costly results.

Although there is no assurance that each "snapshot" view of the DOD program as contained in the FYDP is an ideal solution to the matching of

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programs to objectives, there are real and often substantial penalties associated with deviating from that program plan. In the course of events there are numerous reasons for accepting these penalties when other external tradeoffs are assessed. However, it is of utmost importance to the fulfillment of military requirements and economic efficiency that the full measure of the disruption penalties be recognized and weighed during this assessment process.

IV. ENDNOTES

1. The FYDP shipbuilding program provides a good example of placing reliance on the program out-years. In FY 1981 the program called for 17 new ships in 1981, 19 ships in 1982, and a total of 97 for the entire FYDP period. In the FY 1982 program only 16 new ships were to be acquired in 1982, and even though the overall program was reduced to 80 ships, a disproportionate share was still scheduled for acquisition in the out-years.

2. Planned production runs of over 5 years are not unusual. Weapon systems such as main battle tanks, fighter aircraft, and missiles can be in production for nearly a decade without acquisition delays or stretch-outs.

3. The figures used in calculating F-16, F-15, and A-10 costs were obtained from unpublished papers prepared by Air Force Headquarters, Directorate of Operations Plans and Readiness, in January 1980.

4. The Reagan OMB inflation estimates forecast lower inflation rates. These rates are even lower than the rates forecasted by the Carter administration. Although both administrations recognize the potential for out-year cost overruns created by low estimates, the overruns can be dealt with through supplemental appropriations. The effects of high

inflation estimates on the economy are more widespread and less easily corrected.

5. One should keep in mind that there is seldom a time when force structures are maintained at a completely risk-free level. Some degree of risk is normally associated with any plan. What is suggested is that the total risk over a period of time may be less if some marginal programs are terminated thereby providing funds for other, more effective programs.

CHAPTER V

A PERSPECTIVE ON DOD BUDGET PLANNING

In particular the United States must be careful not to repeat the fiscal mistakes of the Vietnam period. Any projected increase in military strength must be financed on a pay-as-you-go basis.

At present, even more than during the Vietnam War, the United States cannot have a macroeconomic outcome that diverges greatly from the rest of the world without sharply confronting the constraints imposed by the openness of the economy.

Setting National Priorities,
Brookings Institution, 1971

Since the November 1980 elections, there has been widespread excitement over the new attitude of Congress and the Presidency regarding defense spending. While both ends of the liberal-conservation spectrum have differing opinions as to the benefit of increased defense spending, they both appear to anticipate that it will actually occur and will be substantially larger than the increases planned in the last FYDP prepared during the Carter administration. A perspective on DOD budget planning can be gained by examining the current setting, the force structure decisions, and certain adjustments available in the DOD process and how these three aspects are linked together to form the planning environment for DOD.

Current Setting

The DOD budget is increasing. This upturn, however, is not an identifying feature of the 1982 budget but a continuation of a trend started in 1975. One should not be surprised by these cost increases. The Soviets have noted the same sort of rise in costs as presented in Marxism-Leninism on War and Army: "The competition between the powers in the field of military equipment has led to a state of affairs in which this equipment has become extremely complex and exorbitantly expensive."¹ Although the upturn started in 1975, it was the 1980 budget that marked the first large rise in this series of increased budgets and it was in the final Carter budget that even larger increases were proposed. The Reagan revision to the 1982 budget proposes significant increases over the Carter budget, but the full measure of Congressional priorities has not yet been established. While there is a popular mood to increase military capabilities, the American public has not yet confirmed whether it is willing to actually pay the price in the form of tradeoffs in other Government service areas.

Tradeoffs are necessary because of economic realities. The US economic growth has slowed down from its strong growth period recorded from 1945 to 1965. The unique set of conditions that contributed to that growth rate cannot be expected to remain operative indefinitely. Chapter I has already looked at the US economy and pointed out its

strengths in absolute and relative measures as well as some of the changing factors that inhibit rapid future growth. These same factors will place economic demands on the Federal Government and will stress the discretionary portion of the Federal budget.²

The current setting is marked by uncertainties whose characters are a blend of economic and military considerations. One such uncertainty is the future course of action of OPEC in setting world oil prices. The first round of oil price rises in 1973 had a profound impact on both the United States and the world economy. Industrial as well as developing agrarian countries encountered significant alteration of their economic plans. The massive transfer of wealth rapidly brought about a new economic order albeit considerably different from the one being advocated by the nonindustrialized nations up to that time. The world community has still not digested the 1979 round of oil price rises and the continuing shift in wealth to OPEC. Of perhaps an even more ominous nature is the growing belief that world supplies of oil are insufficient to meet total world requirements. While oil presents the most dramatic case, there is gaining recognition of growing scarcity in a number of essential natural resources.

This consciousness has intensified the economic competition among nations in an effort to secure their own supply of resources and carries a military implication. This military implication involves one set of

nations attempting to strengthen their ability to protect their vital trade interests in a region and the resource-rich nations attempting to defend their sovereignty from intervention. The resulting increased military environment places new and additional requirements on US military capabilities.

Finally, the Soviet role in forcing US actions and reactions cannot be omitted. Soviet political maneuvers in the Third World plus their continued expansion of offensive military capability creates a need for corresponding US capabilities. This does not mean that Soviet capabilities have to be mirrored by the United States, but they must be offset in some way by visible military strength. This leads to the considerations facing US decisionmakers regarding the sizing and timing of the force structure.

Force Structure Decisions

The dominating feature of current force structure decisions is the huge backlog of major programs that could command an overwhelming portion of future DOD budgets. It is the coincidence of replacement requirements that aggravates the present structural problems. In the area of strategic forces, all three legs of the Triad require a substantial investment of funds. The MX missile system is now estimated to cost at least \$50 billion before it is completed.³ Even without further delays

in the deployment of MX there is grave concern that the current force of Minuteman missiles will be vulnerable to a Soviet first strike attack for several years. If the United States were to lose its capability to withstand a first strike and still retaliate, a major change in national strategy would be necessary.

The Polaris submarine fleet will also enter an era of reduced strategic effectiveness. This reduction will not be a result of improved Soviet capability but the results of the Polaris boats reaching the end of their 25-year operating life.

Between now and FY 1985, the United States will suffer a temporary shortfall in the number of submarine launchers because the Polaris boats will retire more rapidly than the Tridents come into operation. The first two Polaris submarines are scheduled to be dismantled in the summer of 1980. . . . By 1992 all thirty-one of them will be out of commission, and our entire SLBM force will consist of fourteen Trident submarines.⁴

Delays continue to plague Trident production. Delivery of the first boat was estimated for December 1981, and--perhaps more important from a long-range perspective--the total buy was in jeopardy of being reduced. In the FY 1982 budget the total Trident buy was reduced to 11 boats with a basic rate of production of 1 boat per year through 1984.

Despite this reduction the total cost of the program, which includes the Trident I missile, is increasing in real terms as delivery dates

are delayed. Current estimates of unit costs for 1983 are in excess of \$1.6 billion excluding the missiles. These cost considerations do not address the capabilities issue surrounding the number of strategic launchers involved in acquiring the Tridents and retiring the Polaris submarines. Unless the Trident buy is increased or the operational life of the Polaris boats extended, the number of SLBMs will be substantially reduced in the post-1990 period. Either measure returns to a fiscal consideration because of the sizable budgetary investment involved.

The third leg of the Triad, the manned bomber, is yet another area that will draw heavily upon future DOD budgets. The FY 1982 Defense Report now talks of a Multi-Role Bomber Program that is centered around a new bomber that will contribute to the penetrating, cruise missile, and conventional bombing mission.⁵ Prior to its cancellation in 1977, the B-1 program was estimated to carry a price tag of \$30 billion. The cruise missile carrier aircraft envisioned in the FY 1981 budget was estimated to cost \$10 billion for 100 aircraft. The B-52's replacement, either a B-1 type aircraft or a totally new design, will exceed these outdated cost estimates.

Previous acquisitions of major strategic weapon systems have taken place during the off-cycle of conventional weapon system acquisition. The delays in the replacement of strategic systems followed on the heels of an extended draw down and consumption of conventional assets. The

conventional force investment requirements were discussed in the Chapter III section on restructuring for the future. With both the strategic and conventional force structure requiring substantial reinvestment at the same time, DOD is facing other expenses that may be underfunded in the current budget.

These expenses include increasing costs for petroleum products above the DOD forecasted price, the question of how much will be required to stabilize skilled personnel retention rates, and the now almost routine upward adjustment of costs resulting from low OMB inflation estimates. If underfunding does occur, the DOD budget decisionmakers will once again be faced with an option to delay investment programs. The danger lies in their viewing the decision as being confined to a 12-month budget cycle environment where a program delay or stretch-out may appear to offer a fiscal saving.

Throughout Chapter IV the issue of long term costs and capabilities was pointed out for the purpose of distinguishing between the long-range perspective and the elusive "saving" in the current year. While multiyear budgeting in the total sense may be beyond the authority of decisionmakers within DOD, the utility of cost effectiveness measuring in this manner remains valid. In so far as this concept can be infused into the decisionmakers external to DOD, the budgetary process will be further improved. To continue in the current fashion is to invite further program disruption with its entourage of economic penalties.

Adjusting the Focus

Multiple measures are necessary to reflect multiple objectives and to avoid distorting performance.⁶

Alice M. Rivlin

Changes have taken place in the PPBS process. The creation of the Current Services Budget by the Congressional Budget and Impoundment Act of 1974 has at least forced the President's annual budget submission to address the authorizations and outlays needed to carry on existing programs and activities for the next year under current economic conditions. In doing so, Congress is given a clearer view of expected costs that will be incurred because of existing programs and the costs that are tied to new programs. In constructing the Current Services Budget, DOD as a Federal agency is forced to examine its programs in greater fiscal detail than required by the FYDP.

This entire process, however, is only a small step in the direction of multiyear budgeting. It does not go far enough because its one year lead time can only cover a small portion of the total program research-to-production time. Other, more extensive steps are needed to provide the information that will help in the avoidance of looking to current year savings at the expense of increased out-year costs.

Even now there is recognition within OSD of a need for fiscal guidance earlier in the planning portion of the PPBS. One method of doing this is to put actual planning back into the process and to avoid excessive concentration on programs. If planning can be brought back into balance, the likelihood of integrating programs and capability objectives in a fiscally constrained environment can be achieved. A second method is to place emphasis on a longer range planning horizon that is more closely related to program development times. The FYDP is too short a planning horizon to see how plans and programs can be translated into capability objectives. Although there is no single time span that offers a mystical solution for encompassing the "proper" planning and programming period, the span must be long enough to provide for the full emergence of a new system and not just the evolutionary change in a current program.⁷

The recent development of long-range planning organizations within the DOD community is another manifestation of growing interest in the exploration of rational rather than incremental approaches to PPBS issues. The JCS staff has developed a new document, the Joint Long-Range Strategic Assessment, that seeks to describe the environment and US interests in the upcoming 20-year time frame. The military services have institutionalized long-range planning groups to formalize service objectives and service requirements. More specific efforts in OSD have attempted to link long-range objectives to the budgetary process.

The revised PPBS process seeks to:

- o taken advantage of Presidential and Congressional signals with respect to fiscal levels,
- o Develop closer correlation between the Defense Report on the Budget just completed and the SECDEF guidance for the new budget to be prepared,
- o Reduce the gap between approved budgets and anticipated budgets, and
- o Reduce the problems caused by program deferrals and inadequate long-range projections.⁸

The most recent action in this area consists of a policy letter from the Assistant Secretary of Defense to all DOD departments and agencies directing them to prepare program budgets for the FYDP out-years starting with the FY 1983 budget.

These steps alone will not provide the budget planning solutions. However, they do move in the direction of providing a process that may create a less vulnerable situation for DOD in its budgetary relationship to the Federal budget and the variances in the national economy.

Reducing the Vulnerability

Budgets are not inherently exciting documents. While budgeting in the auditing sense may not instill one with a feeling of action and vitality, budgeting in the competition for funds and planning of programs

can be of the most intense nature. It is in the budget formulation process that DOD planners need not only establish the priorities of their own programs internally, but must win priority positions relative to programs from other agencies. While the payoff from each competing program is not a generic commodity, all tradeoffs are measured in dollar costs. The effect of this is that an increase in DOD program cost does not decrease the utility of that program but instead raises the utility of competing non-DOD programs. Federal budget items involving social or welfare programs can often cite increasing costs as a sign of success as a greater number of recipients are assisted while increasing DOD program costs are considered as a sign of poor planning or management. This places still further competitive pressure on DOD programs.

Despite the apparent strength of the US economy, the DOD budget is subject to disruptions caused by cyclical fluctuations in the economy and cyclical changes in national priorities. There are substantial cost penalties associated with disruption of program plans which are of importance to not only the DOD planner but to the national strategy planner. The eventual consequence of such disruptions is a loss of military effectiveness. The economic and priority fluctuations are beyond the control of DOD, and most likely even the Federal Government, but there are measures that DOD can take to mitigate the cost penalties that are incurred under the present system of program planning.

Multiyear budgeting provides a means of avoiding the false economy of seeking savings in the current year while increasing total program costs over the program life. However the multiyear approach must be of such a length that it covers the major portion of a program. The recent move to budget the entire FYDP by program is admittedly ambitious and as yet untried, but it is still inadequate in length. The other side of the same problem is to assess the beneficial tradeoffs associated with reducing program length and thereby reducing its vulnerability period.

There is no clear solution to an issue affected by so many internal and external variables. A starting point is to first recognize that the DOD budget and therefore the programs within that budget are indeed vulnerable to changing levels of funding. An awakening to the detrimental effects of cost penalties on overall military effectiveness and national capabilities may warrant a fundamental change in the DOD and Federal budgetary process.

V. ENDNOTES

1. Marxism-Leninism on War and Army, Progress Publishers, Moscow, 1972. Translated and published under the auspices of the United States Air Force, p. 221.
2. This assumes that Federal Government economic activity during non-wartime years will continue to operate at approximately the same level. If the movement for balanced Federal budgets and less Government activity in general were to continue, the effect could be even greater pressure on the discretionary section of the budget.
3. The \$50 billion estimate is based on the MX being deployed in the linear mode (200 missiles with 4,600 shelters) costing \$33 billion in 1980 and using projected inflation rates. Delays beyond 1986 would increase the total cost.
4. "The FY 1981-1985 Defense Program Issues and Trends," by Lawrence J. Korb, A&I Foreign Policy and Defense Review, Volume Two, Number Two, p. 40-41.
5. Department of Defense Annual Report, Fiscal Year 1982, p. 114.

6. "Systematic Thinking for Social Action," The 1970 H. Rowan Gaither Lectures at the University of California, Berkeley, The Brookings Institute, Alice M. Rivlin., p. 142.

7. One of the central conclusions reached by the Air Force Long-Range Study Group formed by Secretary of the Air Force Stetson in the summer of 1979 was that current planning periods were too short. A planning reach of 15 years was recommended and formalized in "Air Force Long-Range Planning: A Prospectus," a classified Air Force publication printed in November 1979.

8. These objectives were extracted from an unpublished OSD paper presented to the SECDEF in March 1981.

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